DOCTOR OF PHILOSOPHY

Effective fulfilment, implementation, and supervision of the validation and registration requirements for Clean Development Mechanism (CDM) projects: a missing link in the achievement of the sustainable development objective of the CDM

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Effective Fulfilment, Implementation, and Supervision of the Validation and Registration Requirements for Clean Development Mechanism (CDM) Projects: A Missing Link in the Achievement of the Sustainable Development Objective of the CDM

OLUWATOYIN ADEJONWO-OSHO

A thesis submitted to the School Of Law, University Of Dundee, in fulfilment of the requirements for the Degree of Doctor of Philosophy

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LIST OF ABBREVIATIONS

A&R Projects	Afforestation and Reforestation projects
A/R WG	Afforestation and Reforestation Working Group
CDM	Clean Development Mechanism
COP	Conference of the Parties
COP/MOP	Conference of the Parties serving as the Meeting of the Parties to the Protocol (COP/MOP
CER	Certified emission reduction
CDM-AP	Accreditation Panel
CIMGC	The Interministerial Commission on Global Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DNA	Designated National Authority
DOE	Designated Operational Entity
DNV	Det Norske Veritas
EB	Executive Board
EIA	Environmental Impact Assessment
EST	Environmentally safe and sound technology
GEF	Global Environment Fund
G-77	Group of 77
GHGs	Greenhouse gases
GS	Gold Standard
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
INC	Intergovernmental Negotiating Committee
ICJ	International Court of Justice
ILA	International Law Association
JI	Joint Implementation
KP	Kyoto Protocol
LoA	Letter of Approval
LDCs	Least developed countries
NSDS	National Sustainable Development Strategy
ODA	Official Development Assistance
PDD	Project Design Document
PCF	Prototype Carbon Fund
RIT	Registration and Issuance Team
SBI	Subsidiary body for implementation
SGS UK	Société Générale de Surveillance
UNEP	United Nations Environment Programmee
UNFCCC	United Nations Framework Convention on Climate Change
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
CSD	United Nations Commission on Sustainable Development
WMO	World Meteorological Organization
WTO	World Trade Organisation
WCED	World Commission on Environment and Development
LULUCF	Land Use, Land Use Change and Forestry
IRR	Internal Rate of Return

DEDICATION

This thesis is dedicated to the memory of my father – Alhaji Rafiu Adedapo Adejonwo. I still miss you after all these years; you were a special dad indeed!

To the special man and woman in my life – my beloved children Joshua Oreoluwa Osho and my princess Naomi Oreofeoluwa Osho; thank you so much for allowing me to experience what true love is!

And most of all, this thesis is dedicated to the Lord Jesus Christ.

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Finally I would also like to express my sincere appreciation to the Redeemed Christian Church of God Open Heavens Dundee, for their support and prayers during this process, and to all my friends in Dundee, Lagos and elsewhere.

DECLARATION

I hereby declare that I am the author of this thesis and unless otherwise stated, I have personally consulted all references cited. The work of which this thesis is a record has not been previously submitted or accepted in this or any other university for a higher degree.

Signed…… Date…….
Oluwatoyin Adejonwo-Osho

CERTIFICATION

This is to certify that Oluwatoyin Adejonwo-Osho has done her research under my supervision and that she has fulfilled the conditions of Ordinance 14 of the University of Dundee.

Signed……
Ms. Andrea Ross

Signed……..
Professor Robin Churchill

Date……..

Date……

ABSTRACT

The Clean Development Mechanism (CDM) was established by Article 12 of the Kyoto Protocol to promote sustainable development in developing countries and, at the same time, assist developed countries to achieve their emission reduction commitments in a cost-effective way. The CDM appears to have been successful in its delivering its cost-effective objective but it is debatable if it has been as successful in promoting sustainable development in developing countries. Previous research studies have shown that overall, the CDM is not contributing a great deal to sustainable development. This is because, *inter alia*, there is no system in place for the effective implementation and supervision of the CDM's sustainable development objective, either at the international or national levels.

Proposed CDM projects are required to fulfil validation and registration (V & R) requirements as a prerequisite for their registration as CDM projects. The effective fulfilment, implementation and supervision of these should, presumably, contribute to the achievement of the CDM's sustainable development objective in CDM host countries. This is because some of these requirements, such as stakeholder participation and environmental impact assessment are generally regarded in international law as key tools for promoting sustainable development.

The overall aim of this thesis is to consider the broad question of why the CDM is failing to achieve its sustainable development objective. To answer this question, this thesis focuses specifically on the fulfilment, implementation, and supervision of the V & R requirements for CDM projects, and their role in helping the CDM achieve this objective. None of the previous research studies examined the suitability of the V & R requirements and the fulfillment, implementation and supervision of the V & R requirements, to address the broad

question of why the CDM is failing to achieve its sustainable development objective. Therefore, this thesis seeks to fill this gap by answering two main questions: to what extent are the V & R requirements suitable for promoting sustainable development?; how are the V & R requirements for CDM projects fulfilled, supervised and implemented in practice, and has the practical application of the V & R requirements helped or hindered the promotion of sustainable development?

To answer these two main questions, the thesis undertakes an assessment of the V & R requirements for CDM projects in order to determine if the requirements are well-suited to promote sustainable development in the CDM. To answer the second part of the main question, the research assesses selected registered and rejected projects. The projects were assessed in order to come to a conclusion on whether the V & R requirements for CDM projects are being fulfilled by project participants, and implemented and supervised by the CDM institutional bodies in a manner that can contribute to the sustainable development objective of the CDM.

The findings from the research show that the V & R requirements for CDM projects, as they are currently framed in the rules governing the CDM, are not suitable to promote sustainable development in CDM host countries and do not assist the CDM achieve its sustainable development objective. The research also shows that the V & R requirements are not being effectively fulfilled, implemented and supervised in a way that enhances the ability of the CDM to meet its sustainable development objective. This thesis concluded that this is as a direct result of the lack of minimum standards and guidelines for the fulfilment of the requirements, which also impacts on the way in which the requirements can be implemented and supervised by the CDM's institutional bodies. Therefore, this thesis argues that effective

fulfilment, implementation and supervision of the V & R requirements will contribute to sustainable development in CDM host countries. However, in order to achieve this, minimum standards and guidelines are required to guide the effective fulfilment, implementation and supervision of the V & R requirements.

CHAPTER ONE

"…climate change is not just an environmental issue but is also a fundamental development issue" - former UN Secretary - General Kofi Annan[1]

1.1 Introduction

Climate change and sustainable development are linked and inseparable.[2] As will be highlighted later in this chapter and discussed further in Chapter 2, climate change is one of the key challenges to maintaining and achieving sustainable development, especially in developing countries, and sustainable development is one of the measures for addressing climate change.[3] In recognition of this fact, sustainable development is one of the recurrent themes of the climate change regime (CCR).[4] However, as later chapters will show, mainstreaming sustainable development into policies, decisions and institutions that drive the response to climate change has not yet been very successful.

This chapter is divided into two parts: the first introduces the background to the research, sets out the research questions, justification and the contributions of the research; and the second

[1] B. Muller 'The North-South divide and climate change divide' in P. Hayden *et al*. (eds.) *Debating Environmental Regimes* (New York: Nova Science Publishers, 2002), 37 at pg. 43.
[2] See: K. Halsnaes *et al*, 'Framing issues' in B. Metz *et al*. (eds.), *Climate Change 2007: Mitigation of Climate Change* (Cambridge: Cambridge University Press, (2007), 119 at pg. 121; J. Gupta and N. Grijp, 'Climate change, development and development cooperation' in J. Gupta and N. Grijp (eds.), *Mainstreaming Climate Change in Development Cooperation: Theory, Practice and Implications for the European Union* (Cambridge: Cambridge University Press, 2010), 3 at pg. 16; T. Banuri and H. Opschoor, 'Climate change and sustainable development' DESA Working Paper No. 56, October 2007, 7. http://www.globalcitizen.net/Data/Pages/1291/Papers/20090715144951705.pdf (UN Department of Economic and Social Affairs (DESA) Website, 16/6/2011); K. Halsnaes and J. Verhagen, 'Development based climate change adaptation and mitigation - conceptual issues and lessons learned in studies in developing countries' (2007) 12(5) *Mitigation and Adaptation Strategies for Global Change* 665 at pg. 673;and K. Baumert *et al.* (eds.), *Building on the Kyoto Protocol: Options for Protecting the Climate* (Washington D.C.: World Resources Institute , 2002), 62.
[3] K. Halsnaes *et al*, 'Framing issues' in B. Metz *et al*. (eds.), *Climate Change 2007: Mitigation of Climate Change*, 121.
[4] This is discussed further in Chapter 2, Section 2.3.1

part provides an overview of the CDM as a foundation for the discussion in the remaining chapters.

1.2 Background to the Research

The Intergovernmental Panel on Climate Change (IPCC) defines climate change as "... change in the state of the climate that can be identified, (e.g. using statistical tests), by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Changes in climate can be due to natural variability or as a result of human activity."[5] Changes as a result of natural variability are inherent, and it creates a balance in the atmosphere. However, the international community is concerned about the changes occurring as a result of human activity. There is general consensus that the effects of climate change,[6] as a result of human activity, on humans, the environment and ecological processes are negative and will continue to be so.[7] Some of these include, *inter alia*: an effective doubling of carbon dioxide (CO_2) in the atmosphere and a consequent increase of global mean temperature, as well as extreme weather conditions, which can reduce agricultural crop yield and aggregate food production.[8] Scientists also agree that developing countries are likely to suffer more from the adverse impact of climate change than

[5] R. Pachuri and A. Reisinger (eds.), *Climate Change 2007: Synthetic Report Contributions of Working Groups 1, 11 and 11I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Geneva: IPCC, 2007), 30.

[6] For literature on climate change generally see: M. Parry and T. Carter, *Climate Impact and Adaptation Assessment: A Guide to the IPCC Approach* (London: Earthscan, 1988), 5; J. Houghton *et al*. (eds.), *Climate Change: The IPCC Scientific Assessment* (Cambridge: Cambridge University Press, 1990); A. Dessler and E. Parson, *The Science and Politics of Global Climate Change: A Guide to the Debate* 2nd edn. (Cambridge: Cambridge University Press, 2010); G. O'Hare *et al*., *Weather, Climate and Climate Change* (Harlow: Prentice Hall, 2005); and F. Drakes, *Global Warming: the Science of Climate Change* (London: Arnold, 2000). For a critique of the science of climate change, see V. Gray, *The Greenhouse Delusion: A Critique of Climate Change* (Brentwood: Multi-Science Publishing, 2002).

[7] M. Maslin, *Global Warming: A Very Short Introduction*, (Oxford: Oxford University Press, 2009), 3.

[8] Some of the effects include: sea level rise; human health impacts such as increased incidence of vector-borne diseases, severe heat waves and poor air quality. See W. Tegart *et al*. (eds.), *Climate Change: The IPCC Impacts Assessment* (Canberra: Australian Government Publishing Service, 1990), 1.

developed countries.[9] This is because they have less capacity to mitigate and adapt to its negative effects and are therefore most vulnerable, although they have contributed the least to the problem.[10]

As a result of these undesirable effects, it became necessary to deal with climate change. The United Nations (UN), in several resolutions leading up to UN Resolution 44/207,[11] declared that there is a need to address with urgency the question of climate change.[12] In culmination of this, the CCR was established. The regime comprises two international treaties, the United Nations Framework Convention on Climate Change (UNFCCC)[13] adopted in 1992 and the Kyoto Protocol (KP) [14] adopted in 1997.

1.2.1 The UNFCCC and the Kyoto Protocol

The UNFCCC establishes the overall framework for inter-governmental efforts to address climate change. Although the UNFCCC does not commit Annex I Parties[15] to binding

[9] See: B. Wilson and M. Spannagle, *The Complete Guide to Climate Change*, 97; and H. Bulkeley and P. Newell, *Governing Climate Change* (Abingdon: Routledge, 2010), 29. See also: C. Okereke, *Global Justice and Neoliberal Environmental Justice: Ethics, Sustainable Development and International Co-operation* (London: Routledge, 2008), 119.

[10] J. Ayers and S. Huq, 'Supporting adaptation to climate change: what role for official development assistance? (2009) 27(6) *Development Policy Review* 681. Also see: N. Beg *et al.*, 'Linkages between climate change and sustainable development' (2002) 2 *Climate Policy 132;* and J. Roberts and B. Parks, *A Climate of Injustice: Global Inequality, North –South Politics and Climate Policy* (Massachusetts: MIT Press Books, 2007).

[11] A/RES/44/207, 85th Plenary Meeting, 22 December, 1989. Also see D. Bodansky, 'The United Nations Framework Convention on Climate Change: A Commentary' (1993) 18 *Yale Journal of International Law* 451 at 465.

[12] See for example, A/RES/43/53, 70th Plenary Meeting, 6 December, 1988.

[13] United Nations Framework Convention on Climate Change (New York) 9 May 1992, in force 24 March, 1994. Reprinted in (1992) 31 ILM 849. Hereinafter referred to as UNFCCC. The Convention enjoys near universal membership, currently, there are 194 Parties (193 States and the European Union) to the Convention. See http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (UNFCCC Website, 20/9/ 2010).

[14] Protocol to the United Nations Framework Convention on Climate Change (Kyoto) 11 December 1997, in force 16 February, 2005. Reprinted in (1998) 37 ILM 22. Hereinafter referred to as Kyoto Protocol (KP).

[15] Annex I countries are developed countries and countries that are undergoing the process of transition to a market economy. They include Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, European Economic Community, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland and United States of

emission reduction targets, it sets the groundwork for binding targets and commitments for Green House Gas (GHG) emission reductions for Annex I Parties. For instance, Article 2 states that the 'ultimate objective' of the Convention is to achieve the stabilisation of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system. Article 2 further emphasises that the stabilisation of GHGs should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. Article 3 provides that the international law principles of common but differentiated responsibilities, sustainable development, as well as the precautionary principle will guide the CCR. There are two aspects to the concept of common but differentiated responsibility. The first is that the contribution to global environmental degradation is unequal and the second, that contribution towards mitigation must be commensurate with the different levels of financial resources and technologies that countries command.[16] The precautionary principle is based on the theory that lack of scientific proof should not be a reason for postponing necessary action to protect the environment.[17] As will be discussed in Chapter 2 below, sustainable development is widely accepted as a global policy and as an integral part of international environmental law.

The following terms will be used interchangeably throughout this thesis: 'Annex I Parties' and 'developed countries,' as well as, 'non-Annex I Parties' and 'developing countries'.

America. Every other country not included in this list is a non-Annex I country for the purpose of the UNFCCC.

[16] See: S. Chowdhury, 'Common but differentiated state responsibility in international environmental law: from Stockholm (1972) to Rio (1992)' in K. Ginther *et al*. (eds.) *Sustainable Development and Good Governance* (Dordrecht: Martinus Nijoff Publishers, 1995), 322 at pg. 333.

[17] Principle 15 of the Declaration on Environment and Development (Rio Declaration) adopted at the United Nations Conference on Environment and Development (UNCED). The Rio Declaration forms one of the non-binding texts that were adopted at the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil. UN DOC.A/CONF.151/26/REV.1, Vol. I, 12 August 1992. De Sadeleer states that the precautionary principle is "a public measure meant to counter ecological damage. Not only has the damage not yet occurred, but there is no irrefutable proof that it will occur." N. De Sadeleer *Environmental Principles: from Political Slogans to Legal Rules* (Oxford, Oxford University Press, 2002), 91.

'Parties' refer to developed and developing countries that have signed and ratified the Convention and the Protocol. Where necessary, Parties will be distinguished by whether they are Annex I Parties or non-Annex I Parties.

At the first Conference of the Parties (COP 1) to the UNFCCC in March 1995, a new round of talks was launched to reach agreement on stronger and more detailed commitments for Annex I Parties to address their GHG emissions. Its outcome, popularly called the Berlin Mandate, concluded that the general commitments under the UNFCCC were not adequate for addressing climate change, and it called for a strengthening of the commitments of Annex I Parties.[18] This process resulted in the KP, which was adopted unanimously at COP 3 in Kyoto, Japan, in 1997.[19] KP went several steps further than the UNFCCC by establishing binding emission reduction commitments for Annex I countries in its Annex B.[20] KP commits Annex I Parties to an average reduction of emissions by 5.5% below their 1990 emissions level by the year 2012.[21] To achieve the required reduction, Parties can either use domestic actions only or a mixture of domestic actions and one or more of the Protocol's flexibility

[18]Decision 1/CP.1, The Berlin Mandate: Review of the Adequacy of Article 4, paragraph 2 (a) and (b), of the Convention, including proposals related to a protocol and decisions on follow-up, FCCC/CP/1995/7/Add.1 6 June 1995. Paragraph 2 states that the aim of the Berlin Mandate is to strengthen the commitments in Article 4.2(a) and (b) of the Convention, for developed country/other Parties included in Annex I through policies and measures, as well as to set quantified limitation and reduction objectives within specified time-frames, such as 2005, 2010 and 2020, for their anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol.

[19] For an overview of the negotiation process of the Protocol, see: Grubb *et al*., *The Kyoto Protocol: A Guide and Assessment*; D. Freestone and C. Streck (eds.) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* (Oxford: Oxford University Press, 2005); and F. Yamin and J. Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge: Cambridge University Press, 2004), Chapter 3.

[20] Annex B countries are the 39 emissions-capped industrialised countries and economies in transition listed in Annex B of the KP. The emission reduction commitment of each country varies from country to country. The average emission reduction commitment is 5.2% below 1990 emission levels.

[21] The GHGs regulated by KP are CO_2, methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6). See Annex A, KP.

mechanisms. The flexibility mechanisms are Clean Development Mechanism (CDM), which is the focus of this thesis, Joint Implementation (JI),[22] and Emissions Trading.[23]

Article 12 of the KP established the CDM, and it is the only flexibility mechanism that directly involves non-Annex I countries in the efforts to address climate change. It states in Article 12 (2) that

> The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.

It should be noted that the KP's Article 12 is the only provision in the CCR that ties the promotion of sustainable development to a specific action, i.e. through the implementation of CDM projects in developing countries.[24] The reasons for the dual objectives of the CDM and, particularly, the importance of sustainable development as an objective of the CDM are examined in Section 1.4 below.

[22] The basic principles of Joint Implementation are defined in Article 6 of the KP. JI allows an Annex I country with an emission reduction or limitation commitment under the KP to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex I country. The ERUs earned can be counted towards meeting its Kyoto target. In practice, JI operates like the CDM because it allows more developed countries to invest in countries in transition.

[23] The basic principles of Emissions Trading are defined in Article 17 of the KP. Emissions Trading allow countries or entities to sell carbon credits. Carbon is now tracked and traded like any other commodity in what is known as the carbon market.

[24] Although other provisions in the UNFCCC and KP acknowledge and refer to sustainable development as one of the guiding principles of the CCR and it enjoins Parties to both, to promote sustainable development. See Chapter 2, Section 2.3.

1.3 Aim of the Study

Although the CDM was established to promote sustainable development in developing countries and, at the same time, help developed countries achieve their emission reduction commitments in a cost-effective way, research has shown that while the cost-effective emission reduction objective of the CDM is being achieved, the sustainable development objective is not.[25] There are, however, validation and registration requirements for CDM projects (hereinafter referred to as V & R requirements), which should presumably contribute to the achievement of the CDM's sustainable development objective. This is because individually, some of these requirements are regarded nationally and in international law as tools for achieving sustainable development.[26] For example, the V & R requirements for stakeholders' participation and EIA are regarded as tools for promoting sustainable development in international law. Notwithstanding these requirements, the CDM's sustainable development objective is still not being fulfilled, and this suggests that there may be some inadequacies, either with the requirements themselves, or challenges with the process for fulfilling, implementing and supervising them. Therefore, this thesis undertakes an analytical study of the V & R requirements for CDM projects and, thereafter, conducts an assessment of selected CDM projects.[27]

Ultimately, this thesis is hinged on the premise that the CDM has the potential to foster policy reforms that will promote sustainable development in CDM host countries. This can be achieved through the effective fulfilment, implementation and supervision of the V & R

[25] Several researchers have come to the conclusion that the CDM does not significantly contribute to sustainable development. See Section 1.3.2 *infra*.
[26]. See Rio Declaration, Principle 10, *Reprinted* in 31 ILM 874 (1992). Also note that although the V & R requirements are generally regarded as tools for promoting sustainable development, the sustainable development achieved by CDM projects can be on a global or national scale. For instance, the reduction of GHGs will contribute to sustainable development, albeit, globally, while stakeholder participation will contribute directly to the host country and community's sustainable development.
[27] See Section 1.3.4 *infra* for the structure of the thesis.

requirements, which will, in turn, transform institutions in the host country that implement these requirements.[28] For example, in order to effectively implement the requirement for Environmental Impact Assessment (EIA), a CDM host country that does not have policies and institutions to administer the EIA processes will have to put institutional structures and policies in place, if it is desirous of hosting CDM projects.

Note that the terms 'fulfil', 'implement' and 'supervise' will be used throughout this thesis as follows. CDM project participants fulfil the V & R requirements, the Designated National authority (DNA)[29] implements the requirements, while the Designated Operational Entity (DOE),[30] and the CDM Executive Board (EB) and its working group supervise the fulfilment and the implementation of the V & R requirements.

1.3.1 Research Question

This thesis seeks to answer two main questions: to what extent are the V & R requirements suitable for promoting sustainable development?; how are the V & R requirements for CDM projects fulfilled, supervised and implemented in practice, and has the practical application of the V & R requirements helped or hindered the promotion of sustainable development?[31]
The following sub questions are relevant for answering the main research questions.

1. What is the meaning of sustainable development in international law and the CCR?

[28] See Chapter 3, Section 3.3.1 for discussions on how the CDM can foster policy reforms in CDM host countries. See: J. Sépibus, 'Reforming the Clean Development Mechanism to accelerate technology transfer' Swiss National Centre of Competence in Research (NCCR) Working Paper No 2009/42 (2009), 3. http://phase1.nccr-trade.org/images/stories/publications/IP6/CDM%20and%20technology%20transfer%2020%20october%20finalfinal.pdf (NCCR Trade Regulation Website, 20/10/ 2010); and M. Wara and D. Victor, 'A realistic policy on international carbon offsets' Stanford University Program on Energy and Sustainable Development (PESD) Working Paper #74 (2008), 15. http://iis-db.stanford.edu/pubs/22157/WP74_final_final.pdf (The Freeman Spogli Institute for International Studies Website, 20/10/ 2010).
[29] The national agency in charge of CDM activities, see Chapter 4 for further discussions on the DNA.
[30] The DOE is an independent assessor contracted by project participants to validate proposed project and report compliance with V & R requirements. See Chapter 4, Section 4.2.5 for further discussions on the DOE.
[31] See Chapters 3 and 5 for relevant discussion of the V & R requirements, their fulfilment and supervision.

2. Do the rules confer sufficient authority on the CDM's institutional bodies to effectively implement and supervise the V & R requirements?

1.3.2 Justification and Contribution of Research

Previous research has shown that the CDM is not adequately fulfilling its sustainable development objective.[32] These studies have primarily focused on determining, through sustainability assessments of projects, whether proposed and registered CDM projects will contribute to sustainable development in CDM host countries. This present study differs from previous studies because none of those studies involve an in-depth study of the V & R requirements for CDM projects, to determine if they are suitable for promoting the sustainable development objective of the CDM. Furthermore, none of those previous studies considers if these requirements are being fulfilled, implemented and supervised in a way that enhances the ability of the CDM to fulfil its sustainable development objective.

Several of the studies have conducted sustainability assessments of registered CDM projects to assess the contributions of the CDM to sustainable development. However, despite adopting different sustainability assessment tools to examine whether the CDM is fulfilling its sustainable development objective, most of the studies conclude that: left to market forces, the CDM does not significantly contribute to sustainable development in CDM host countries; the CDM's contribution to sustainable development for the 2008-2012 crediting period will be minimal; trade-offs exist between the dual objectives of the CDM in favour of its cost-effective reduction objective; and the market structure of the CDM and its focus on

[32] See Footnote 35 *infra*.

cheap emission reduction credits results in minimal sustainable development benefits for CDM host countries.[33]

For instance, studies by Sutter and Parreno, Ellis *et al.*, Pearson, and Olsen and Fenhann assessed different registered CDM projects in different host countries, and they each gave different but connected reasons why the implementation of CDM projects is resulting in trade-offs between its twin objectives. According to these studies, the CDM is resulting in trade-offs because there are no international standards for assessing sustainable development and the structure of the CDM as a market mechanism would contribute to a trade-off in favour of the CDM's cost-efficient objective.[34] Although the CDM is well-placed to stimulate transfer of technology and other socio-economic benefits to the host country, it is unlikely to do so in significant levels in its current form, because the CDM is a market mechanism with greater supervision of its cost-effective emission reduction objective than its sustainable development objective.[35] Furthermore, the architectural structure of the CDM as a market

[33] See the following: C. Sutter and J. Parreno 'Does the current Clean Development Mechanism deliver its sustainable development claim: An analysis of officially registered CDM projects?' (2007) 84(1) *Climate Change* 75-90; J. Ellis *et al.*, 'CDM taking stock and looking forward' (2007) 35 *Energy Policy* 15-28; B. Pearson, 'Market failure: why the Clean Development Mechanism won't promote clean development' (2007) 15(2) *Journal of Cleaner Production*, 247-252; K. Olsen and J. Fenhann, 'Sustainable development benefits of Clean Development Mechanism Projects: a new methodology for sustainability assessments based on text analysis of the project design documents submitted for validation' (2008) 36 *Energy Policy* 2819-2830.
See also the following literature on the CDM and sustainable development: A. Olhoff *et al., CDM Sustainable Development Impacts* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2004); and K. Olsen and J. Fenhann (eds.), *A Reformed CDM – including new Mechanism for Sustainable Development* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2008), 1-185; P. Nussbaume, 'On the contribution of labelled certified emission reductions to sustainable development: a multi-criteria evaluation of CDM projects' (2009) 37 *Energy Policy* 91-101; M. Wara, 'Measuring the Clean Development Mechanism's performance and potential' (2007) 55 *UCLA Law Review* 1759 -1803; C. Figueres, 'Sectoral CDM: opening the CDM to yet unrealized goal of sustainable development' (2006) 2(5) *McGill International Journal of Sustainable Development Law and Policy* 5 at pg. 5.

[34] Sutter and Parreno assessed 16 registered CDM projects for their contributions to employment generation, equal distribution of CDM returns and improvement of local air quality in the host countries. Sutter and Parreno, (2007), 76.

[35] Ellis, *et al.*, (2007), 24.

mechanism is designed to attract cost-effective emission credits without rewarding projects that provide sustainable development benefits.[36]

In two slightly different studies, Olsen and Paulsson reviewed existing literature to assess the state of knowledge on how the CDM contributes to sustainable development, including poverty alleviation.[37] According to Olsen, the conclusion from these research studies indicates that the initial assumption of 'synergies' and 'win–win' opportunities for project participants does not hold up when projects are assessed for their sustainable development contributions.[38] Olsen and Paulsson each concluded that the common thread that runs through all the literature is that although the CDM is working well as a market mechanism for providing cost-effective emission reduction credits, the market structure of the CDM and its focus on cheap emission reduction credits results in a lack of sustainable development benefits for CDM host countries.[39]

Taken together, the conclusions of the various research studies on the contribution of the CDM to sustainable development in CDM host countries confirm Grubb's position in 1999 that "[t]he conventional view of the CDM in most OECD countries is that it should be primarily a way of minimizing the costs to them of the Kyoto commitments, by allowing investments in emission-avoiding activities to generate credits wherever it is cheapest to do so."[40] From the assessment of the literature on the contribution of the CDM to sustainable

[36] B. Pearson, (2007), 249
[37] See K. Olsen, 'The Clean Development Mechanism's contributions to sustainable development: a review of the literature' (2007) 84(1) *Climate Change*, 59-73; and E. Paulsson, 'A Review of the CDM Literature: from Fine-tuning to Critical Scrutiny' (2009) 9 *Int. Environ Agreements* 63-80.
[38] K. Olsen, (2007), 64.
[39] K. Olsen, (2007), 67 and Paulsson, (2009), 76.
[40] M. Grubb *et al., The Kyoto Protocol: A Guide and Assessment* (London: The Royal Institute of International Affairs and Earthscan, 1999), 226.

development in CDM projects and the assessment of registered projects in Chapter 5 of this thesis, that position still exists in the CDM.

Thus, the first main contribution of this thesis is to conduct an analytical study of the V & R requirements to determine if they are suitable to promote the sustainable development objective of the CDM. The second main contribution of this thesis is to consider if these requirements are being fulfilled, implemented and supervised in a way that enhances the ability of the CDM to achieve its sustainable development objective. Thirdly, the subject of this thesis is important at this time because the commitments of Annex I Parties will expire in 2012 and negotiations are currently on-going to determine their future commitments in the post-2012 period. These negotiations are being carried out by the *Ad Hoc* Working Group on Further Commitments for Annex I Parties under the KP (AWG-KP). The AWG-KP has agreed that the flexibility mechanisms should continue to be available to Annex I Parties as a means to reach their emission reduction objectives after 2012.[41] As part of the on-going negotiations, the AWG-KP is considering ways to improve the CDM.[42] Separately and in harmony with the AWG-KP's efforts, it is a useful exercise at this time to examine other ways of improving the CDM to ensure achievement of its sustainable development objective.

[41] See paragraph 22 of Report of AWG-KP-6 (FCCC/KP/AWG/2008/8, 4 February 2009). The commitment period for the KP expires in 2012 and there are on-going negotiations on a post 2012 climate regime. Paragraph 22 states that "[t]he AWG-KP noted that emissions Trading and the project-based mechanisms, as well as measures to limit or reduce GHG emissions and to enhance removals from land use, land-use change and forestry (LULUCF) activities, should continue to be available to Annex I Parties as means to reach their emission reduction objectives..." Also see Decision CP.13, FCCC/CP/2007/6/Add.1. In 2007, COP 13 adopted the Bali Roadmap. Under the roadmap, a new negotiating process, 'the Bali Action Plan,' was launched to address such issues as mitigation and reduction commitments, including the use of markets to promote mitigation actions.

[42] See Consideration of further commitments for Annex I Parties under the Kyoto Protocol, Revised proposal by the Chair (FCCC/KP/AWG/2010/CRP.4/Rev.4, 10 December 2010), Chapter III paragraph 17.

1.3.3 Methodology

This thesis undertakes an analytical desk study of relevant documents necessary to draw inferences and conclusions on the V & R requirements and CDM projects.[43] It does not explore in any wider context, the normative status of the CDM. Also, a desk study is deemed appropriate for this thesis because it is impossible to do a field study of the V & R requirements. Although a field study could be conducted for the registered and rejected projects assessed, it would prove impossible in view of the funds required to conduct site visits of all the CDM projects located in different countries in the world, and the time allowed to conduct a PhD thesis will not be sufficient for this. Furthermore, the required documents are readily available on the UNFCCC website and online, therefore, valid inferences and conclusions can be reached from the analysis of available documents.

For the assessment of the fulfilment and supervision of the V & R requirements, this thesis selects and evaluates 100 registered CDM projects and 84 rejected projects. At the time of project selection in January 2008, there were over 1000 registered CDM projects in the UNFCCC project pipeline and this thesis selected 10% (100) of those.[44] For the project selection, this thesis selected from projects registered between November 2004, when the first CDM project was registered, and December 2007, which is the cut-off date selected for this thesis.[45] Each year (that is, 2004, 2005, 2006 and 2007) was divided into four quarters (that is: January through March; April through June; July through September; and October through

[43] For literature on research methods, see: N. Williman, Research Methods: The Basics (Abingdon: Routledge, 2011); J. Bell, *Doing Your Research Paper: A Guide for First-Time Researchers in Education, Health and Social Science* 5th Edn. (Berkshire: Open University Press, 2010); and K. Krippendoff, *Content Analysis* (London: Sage Publications, 1980), 21. Krippendoff defines content analysis as a research technique for making replicable and valid inferences from data to their context.

[44] This thesis chose 10% of the 1000 registered CDM projects in the UNFCCC project pipeline as of December 2007 in order to allow for project assessment and analysis and the presentation of findings in the thesis within the time allowed for a PhD thesis.

[45] December 2007 was chosen as the cut-off date in order to allow for project analysis and the presentation of findings in the thesis within the time allowed for a PhD thesis.

December) and at least one project was randomly selected from each month in each quarter.[46] In the selection process, projects were selected as a representative sample from all the sectoral scopes[47] that had projects registered under them in the selection period (that is, November 2004 to December 2007). This was done to ensure that at least one project is selected from each month and quarter of the year, in order to obtain a fair representation of all projects over time, as well as to cover all sectoral scopes in the CDM project pipeline. A practical problem with this method of selection is that not all months and quarters had enough projects. For example, there is only 1 registered project in 2004. This thesis resolved this problem by selecting the available projects and spreading out the excess over the other quarters.

To assess how the requirements are fulfilled, the Project Design Document (PDD) for each of the selected projects was examined. PDDs are official documents that project participants are required to submit to the DOE. The PDD contains a detailed description of the proposed CDM project and how it has fulfilled the V& R requirements. It contains information on the methodology used to establish the project baseline, how the additionality test procedure was fulfilled, the monitoring plan for the project and the monitoring methodology employed. It also includes the environmental impacts of the project and a section confirming whether an EIA was deemed necessary by the host country or the project participants, as well as the procedure adopted to conduct stakeholder participation. Consequently, the PDD is the main

[46] Note that the number of project registered in each month differs and some months in the divided quarters did not have registered CDM projects. In such instances, the selection was carried over to the next month. Also, where only one project was registered in a month that project was selected. However, where a month had more than one registered project, then CDM projects were randomly selected from the available projects.

[47] There are fifteen sectoral scopes for CDM projects. The list of sectoral scopes is based on the list of sectors and sources contained in Annex A of the KP. See Chapter 5, Table 5.1 for a list of the scopes. A CDM project could be registered under one sectoral scope or more. See http://cdm.unfccc.int/Projects/projsearch.html (UNFCCC Website, 12/12 2010).

source of information used in the assessment.[48] In addition, the PDD of 84 rejected CDM projects are assessed and analysed. An analysis of the reasons for the rejection was conducted to determine the extent to which the institutional structures overseeing the CDM effectively supervise the requirements. The cut-off date for the rejected CDM projects was December 2008 and as at this date, there were 84 rejected projects, so, all the rejected projects were selected.

The research was carried out in five stages entirely as a desk study. The first stage of the research involved a background research on the CCR and an examination of the CDM in order to serve as a foundation for the rest of the chapters. The second stage of the research involved carrying out a study of the V & R requirements, as contained in the 'Modalities and Procedures for a Clean Development Mechanism' (hereinafter called the CDM rules)[49] and the 'Clean Development Mechanism Validation and Verification Manual' (hereinafter called the CDM Manual)[50] in order to determine if the requirements, as they are currently framed, are suitable to promote sustainable development. In conducting the study on the V & R requirements, the 'Gold Standard Requirements' (hereinafter called the GS requirement)[51] are compared with the V & R requirements. This is because the Gold Standard (GS) is known to register and certify high quality emission reduction projects that also make positive impacts on sustainable development.[52] This stage also reviewed the institutional structure of the CDM

[48] See footnote 59 *infra*.
[49] Decision 3/CMP.1, Modalities and Procedures for a Clean Development Mechanism (FCCC/KP/CMP/2005/8/Add.1, 30 March 2006), hereinafter referred to as the CDM rules. This Decision established the Modalities and Procedures for a clean development mechanism as defined in Article 12 of the KP. The Decision forms part of an agreement of 39 decisions which facilitated the prompt start of the CDM and the other flexibility mechanisms in the Protocol.
[50] Clean Development Mechanism Validation and Verification Manual (Version 01.2), CDM-EB-55, Annex 1. Hereinafter referred to as the CDM Manual.
[51] Available at http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Requirements-11.pdf (12/4/2012). The Gold Standard requirements provide the requirements and the rules of Gold Standard certification for proposed projects, for use by validators and project developers.
[52] See Section 1.7 *infra* for further discussion on the GS.

and the authority of the institutions and bodies to effectively supervise the V & R requirements.[53] A new regulatory framework is currently being implemented for the CDM. As a result of this, an addendum of the analysis of the new relevant regulatory framework has been added to Chapters 3 and 4 below.

The third stage involved a pilot study of 12 registered CDM projects. The main reason for undertaking this pilot study was to test if the required materials were easily accessible and cost free, and whether the materials available are sufficient to come to a reasonable conclusion about the fulfilment and supervision of the V & R requirements, without having to carry out on-site visits and conduct interviews with relevant CDM actors and institutions. The results of the pilot study established that necessary project documentation and other relevant documents are readily available on the UNFCCC website and elsewhere online. Importantly, the results show that these documents are sufficient to reach a conclusion regarding the fulfilment and supervision of the requirements. The first project registered for each sectoral scope that had a project registered under it at the time of project selection was chosen for the pilot study. Furthermore, the pilot study was conducted to determine how much time was needed to assess projects, particularly whether the assessment can be carried out within the timeframe allowed for a PhD research.

The fourth stage of the research involved the assessment of the selected projects. Here, an assessment and analysis of the 100 registered CDM projects and 84 rejected projects were undertaken. The research method used was the textual analysis of the documents relevant for the validation and registration of the CDM projects, specifically, the PDDs. All selected

[53] The CDM's institutional structure includes the EB, DOE and the DNA, as well as other working groups, committees and panels. See Chapter 4 for further discussion on their roles and functions.

CDM projects were analysed for their fulfilment of the V & R requirements. The study assessed only the PDDs of the projects chosen for this study. This is because the pilot showed that it was unnecessary to assess the validation report for each PDD, since the validation report basically repeats what is contained in the PDD.[54] Furthermore, because of the new regulatory framework mentioned earlier in stage two, this thesis considered it necessary to conduct a follow-up assessment of recently registered CDM projects in order to establish if there has been an improvement, as a result of the new regulatory framework, on how project participants fulfil and how the CDM's institutional bodies implement the V & R requirements.

Regrettably, it was not possible to assess projects registered under the new regulatory framework because none of the projects registered on the UNFCCC's website as at July 2012 adopted the new regulatory framework in fulfilling the V & R requirements.[55] However, to determine if there has been an improvement in the way the V & R requirements have been fulfilled and implemented over time, the author elected to assess 20 registered CDM projects from January to May, 2012. These projects are the latest projects registered on the UNFCCC's website as of July 2012 when the projects were selected. Similar to the methodology used to pick registered projects in 2007, 20 registered projects were selected from 1st January, 2012 to 21st May, 2012. Every other project after this date was at the final stage of project registration. To allow for uniformity, the first four projects were selected from each month. The analysis from this assessment is presented in Chapter 5 below. Additional assessment of rejected projects was not conducted for this thesis.[56]

[54] See Chapters 5 for an expanded justification of this decision.
[55] This is because on the average, it takes about two years for proposed CDM projects to pass through the validation and registration stages of the CDM.
[56] See Chapter 5, Section 5.2 for justification of this decision.

The fifth and final stage of the research involved a general analysis of the research findings as a whole, as well as the thesis conclusions and recommendations. Conclusions were drawn from the findings and recommendations made, based on those findings.

1.3.4 Structure of the Thesis

The thesis is divided into six chapters. Chapter One provides background information on the research and it introduces the CDM. Chapter Two explores the relationship between sustainable development and the CDM. Chapter Three reviews the validation and the registration requirements of the CDM, analysing their suitability for promoting sustainable development.[57] Chapter Four presents an overview of the institutional structure of the CDM. Chapter Five analyses the projects (registered and rejected) and Chapter Six presents the conclusions and recommendations of the thesis. The next section provides an overview of the CDM as a foundation for the discussion in the remaining chapters.

1.4 CDM: Reasons for its Dual Objectives

One of the key arguments made by developing countries is that historically, they are not responsible for the problem of climate change and as such, they should not be burdened with the responsibilities for mitigating it. However, apart from the fact that its negative effects are not location specific, it is predicted that the GHG emissions of developing countries, notably China and India, will overtake those of developed countries in decades to come.[58] In fact,

[57] Note that the analysis of the V & R requirements for CDM projects, contained in the CDM rules, will be analysed alongside the CDM validation and verification Manual.

[58] See the following: D. Freestone, 'The international climate change legal and institutional framework: an overview' in D. Freestone and C. Streck (eds), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 3 at pg. 15; International Bank for Reconstruction and Development (IBDR), *International Trade and Climate Change: Economic Legal and Institutional Perspectives* (Washington DC: The World Bank, 2004), 46; A. Olhoff *et al., CDM Sustainable Development Impacts* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development), 10; B. Metz *et al.* (eds.), *Climate Change 2001: Mitigation* (Cambridge: Cambridge University Press, 2001), 19; House of Commons Environmental Audit Committee, *Reaching an International Agreement on Climate Change: Sixth Report of Session 2007 – 2008* (London: Parliamentary House of Commons, 2008), 14; and L. Parker and J. Blodgett, 'Greenhouse Gas Emissions: Perspectives on the Top 20 Emitters and Developed Versus Developing Nations' http://www.fas.org/sgp/crs/misc/RL32721.pdf

China, despite being categorised by the UNFCCC as a developing country, currently has the highest GHG emission levels globally, ahead of all other countries including Annex I,[59] although its per capita emissions are below those of most developed countries.[60] Therefore, it is considered imperative that both developed (North) and developing (South) countries participate in the response to climate change. The term 'North' and 'South' is synonymous with rich and poor countries; it is the socio-economic and political division that exists between the wealthy developed countries, known collectively as 'the North' and the poorer developing countries known as the 'South'.[61]

The North-South stalemate on climate policy can be traced to the long-standing dispute on the environment and development.[62] The North sought to address global environmental issues such as ozone depletion, habitat loss and climate change, in isolation of developmental issues, while the South maintained that development issues, such as provision of safe drinking water

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(Federation of American Scientist Website, 16/12/2010).

[59] See World Resources Institute's Climate Analysis Indicators Tool (CAIT) Version 7.0. (Washington DC: World Resources Institute, 2010). Also see K. Baumert *et al*., *Navigating the Numbers: Greenhouse Gas Data and International Climate Policy* (Washington DC: World Resources Institute, 2005), 12.

[60] K. Baumert *et al*., *Navigating the Numbers: Greenhouse Gas Data and International Climate Policy*, 22.

[61] M. French, *The Impact of Globalisation on Less Developed Countries and the Role of Intergovernmental Multilateral Organizations in Promoting Development in Less Developed Countries*, 2. A thesis submitted to the Webster Graduate School of Webster University, available at http://books.google.co.uk/books?id=bPr7W9KgLRoC&printsec=frontcover#v=onepage&q&f=false .

[62] J. Roberts and B. Parks, *A Climate of Injustice: Global Inequality, North –South Politics, and Climate Policy* (Massachusetts: MIT Press books, 2007), 6. According to the authors, "[t]he issue of reconciling social justice with environmental protection has surfaced at every major international meeting since the first environment and development conference at Stockholm in 1972…" at page 2. See also: Mathy *et al.*, (2001), 1; B. Muller, *Equity in Climate Change: The Great Divide* (Oxford: Oxford Institute for Energy Studies, 2002). For instance, the 1972 Stockholm conference is regarded as the starting point for international response to growing concern in the North over environmental issues, however most of the countries in the South had just got their independence and they were more concerned with other issues such as social and economic issues. Therefore, they saw the conference as an opportunity to discuss aspects of social development and justice. Participants in Stockholm therefore arrived with different priorities but with a common goal of elaborating global measures that would bring about positive changes to address their specific concern. See also: A. Kallhauge *et al.*, 'The multilateral process for sustainable development: past, present and future' in A. Kallhauge *et al*. (eds.), *Global Challenges: Furthering Multilateral Process for Sustainable Development* (Sheffield: Greenleaf Publishing, 2005), 16 at pg. 17; and D. Bodansky, 'The United Nations Framework Convention on Climate Change: a commentary' (1993) 18 *Yale Journal of International Law* 451 at pg. 479. For instance, developing countries through the Group of 77 (G-77) and China insisted that the developed counties bore the main responsibilities for tackling the problem of climate change, citing their historical responsibility.

and access to energy, food and healthcare, are of greater importance to them.[63] In fact, Chancellor Luiz Felipe Lampreia of Brazil is quoted as saying during the negotiations leading to the KP, that, "[w]e cannot accept limitations that interfere with our economic development."[64] Therefore, while the North has always maintained that environmental protection has to be addressed by all, the South has maintained that the response to environmental protection should not limit their development aspirations.[65]

The eventual creation of the CDM with dual objectives is an attempt to address these issues. The inclusion of sustainable development as one of the objectives of the CDM fulfils the development desires of developing countries and it elevates climate change policies from being perceived as a burden to be avoided (especially by developing countries), to being seen as supporting national development priorities. Consequently, the CDM came with the implicit assumption that synergies and win-win opportunities for both developed and developing countries would constitute the basis for its acceptance.[66] From the developing country perspective, the benefits of the CDM arise from its promotion of sustainable development in the host country, *inter alia*, through increased investment flows that would finance clean technology and contribute to achieving the host country's sustainable development goals. Such sustainable development goals include generation of clean energy, reduced local air pollution, employment generation, and private/public sector capacity development. In addition to promoting sustainable development, the CDM also helps developing countries to

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[63] J. Roberts and B. Parks, *A Climate of Injustice: Global Inequality, North –South Politics, and Climate Policy* , 6.
[64] *Ibid*. at 4. Chancellor Luiz Felipe Lampreia was Brazil's Minister of State for Foreign Relations from 1995 to 2001.
[65] K. Halsnaes and P. Shukla, 'Sustainable development as a framework for developing country participation in international climate change policies' (2008) 13(2) *Mitigation and Adaptation Strategies for Global Change*, 105 at pg. 116. Also see A. Markandya and K. Halsnaes, 'Climate change and sustainable development: an overview' in A. Markandya and K. Halsnaes (eds.), *Climate Change and Sustainable Development: Prospects for Developing Countries* (London: Earthscan Publications Limited, 2002), 1 at pg. 1.
[66] K. Olsen, (2007), 66.

contribute to the ultimate objective of the UNFCCC.[67] On the other hand, the win-win opportunities for developed countries would be achieving their emission reduction and compliance commitments in a cost-effective manner and contributing to the ultimate objective of the CCR.

Therefore, the CDM has been described as the ultimate instrument of North-South climate justice because although climate change has been the result of uncontrolled GHG emissions in the North, its worst consequences will be suffered by the South, especially the least developed countries.[68] Developed and developing countries had high expectations for the CDM,[69] and, theoretically at least, sustainable development was seen as a main driver for developing country interest and participation in the CDM.

However, research studies have sounded a note of caution about the CDM and Article 12. For instance, Michaelowa and Michaelowa have suggested that the dual objectives of the CDM present some challenges in promoting sustainable development. According to them, Article 12(2) of the KP unwittingly assumes that there would be an automatic synergy between the twin objectives of the CDM.[70]

Another challenge for sustainable development in the CDM is that Article 12 of the KP creates a marriage of two ideologies that are at extreme ends of a spectrum. By forcing

[67] Recall that Article 12(2) of the KP states that "[t]he purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention."
[68] H. Bulkeley and P. Newell, *Governing Climate Change*, 29. See also: C. Okereke, *Global Justice and Neoliberal Environmental Justice: Ethics, Sustainable Development and International Co-operation* (London: Routledge, 2008), 119.
[69] K. Olsen, (2007), 61.
[70] A. Michaelowa and K. Michaelowa, 'Does climate policy promote development?' (2007) 84(1) *Climate Change* 1 at pg. 2. "…this line of thought is reflected in the double target of the CDM which says that projects should at the same time assist developing countries in achieving sustainable development and assist industrialized countries to reach their emission targets".

capitalist objectives to co-exist with socialist objectives, it is clear that the stronger capitalist objective of the CDM will dominate, unless the socialist objective is actively governed and implemented.[71] This is because, more likely than not, CDM investors are more interested in the cheap credits and higher rate of returns that CDM affords them and they are less interested in ethical issues such as sustainable development and reducing poverty, which are more expensive to implement. Pearson rightly stated that the CDM is a market mechanism and not a development fund and that it is bound to exhibit capitalist tendencies.[72]

According to Cosbey *et al.*, "[f]ully exploiting the CDM's potential for a development dividend requires a careful integration of two different sets of objectives: those of the private sector, guided by the bottom line, and those of developing countries, guided by their development priorities and emphasis on poverty eradication. Without that integration, the success of the CDM and its contribution to the wider objectives of the UNFCCC will be undermined.[73] Finally, from the author's interaction with CDM participants, investors and promoters, it is safe to say that sustainable development is not always one of the key considerations of CDM investors, but is only an incidental benefit of implementing CDM projects.[74]

[71] The marriage of the twin objectives of the CDM reflects the attempt of the negotiators of the Protocol to satisfy the demands of the two main blocs during the negotiations- that of the developed and the developing countries with regards to a right to development and protection of the environment.
[72] B. Pearson, (2007), 249.
[73] A. Cosbey *et al*, *Realizing the Development Dividend: Making the CDM Work for Developing Countries: Phase I Report*. (Winnipeg: International Institute for Sustainable Development, 2005), 2. Available at http://www.iisd.org/pdf/2005/climate_realizing_dividend.pdf (IISD website, 15/9/ 2010).
[74] The author consulted on the initial stages of a proposed CDM project and it is from these interactions that the opinion was formed.

1.5 Characteristics of the Mechanism

The twin objectives of the CDM are one of its most important characteristics. Secondly, another feature of the CDM is that it is a flexibility mechanism because it affords Annex I Parties with emission reduction commitments, or their entities, the opportunity of choosing how, and where, to reduce their GHG emissions. They can do so locally through national programmes and initiatives or through the CDM by investing in emission reduction or removal projects in non-Annex I countries and earning Certified Emission Reduction (CER) credits for the reductions achieved. CERs are equivalent to the volume of emission reductions achieved by a CDM project, calculated as one CER for every tonne of CO_2 reduced or avoided. The emission reductions achieved through CDM projects in non-Annex I countries are usually cost-effective for Annex I Parties because if such projects were to be implemented in Annex I countries, they would be more expensive.[75] This is because non-Annex I Parties often adopts less efficient technologies and thus, there are more opportunities for Annex I Parties to introduce efficient technologies to non-Annex I host countries through CDM projects and earn CERs for such projects. In addition, the labour and resources required to implement CDM projects are relatively cheaper in developing countries.[76]

A third characteristic of the CDM is that it is an offsetting mechanism. For each tonne of CO_2 equivalent reduced or avoided, a CDM project earns CERs which the Annex I Party can use to contribute to its emission reduction commitments.[77] As a result, Annex I Parties or their entities can either increase their domestic emissions by the amount of CERs they have earned

[75] Meijer and Werksman, 'Keeping it Clean – Safeguarding the Environmental Integrity of the Clean Development Mechanism' in D. Freestone and C. Streck (eds.) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work*, 192.
[76] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues* (Roskilde: UNEP Risoe Centre on Energy, Climate, and sustainable development, 2009), 18.
[77] CDM rules, Annex, Paragraph 1(b) states that a "certified emission reduction" or "CER" is a unit representing one tonne of carbon dioxide-equivalent (CO_2-e) sequester or abated …"

or, more realistically, lower the domestic emission reductions they have to make to achieve their emission reduction commitments by virtue of the CERs they have earned. Therefore, the emission reductions achieved by CDM projects are used to offset emission reductions that Annex I Parties should achieve, enabling these Parties to achieve their emission reduction targets at a lower cost.[78]

Lastly, the CDM is also characterised by the fact that it functions as a market mechanism which by operation allows CERs earned by CDM projects to be transferred to an Annex I Party's account or purchased in the carbon market at the prevailing market price.[79] The price of the CERs earned from CDM projects is decided between buyer and seller, although the price is also affected by the economic principle of demand and supply.

The characteristics of the CDM could be perceived as its strength and its weakness hindering it from achieving its dual objectives. For instance, the CDM's characteristic of being a market mechanism has been identified by research as one of the reasons why trade-offs exist between the dual objectives of the CDM in favour of its cost-effective emission reduction objective.[80] On the other hand, the CDM's dual objectives can be seen as a strength. This is because the effective implementation of CDM projects in developing countries will promote sustainable development and foster policy reforms in such countries.

Having said the above, it is also important to place the CDM in the wider context within which it operates. This is because the CDM project does not exist in isolation; it is influenced

[78] See 'CDM Watch statement on quality restrictions on the use of industrial gas offsets in the EU ETS.' http://www.cdm-watch.org/wordpress/wp-content/uploads/2011/01/CDM-Watch-statement-on-quality-restrictions-on-the-use-of-industrial-gas-offsets-in-the-EU-ETS.pdf, (CDM-Watch Website, 2/3/2011).
[79] See G. Singh, *Understanding Carbon Credits* (New Delhi: Aditya Books Pvt. Ltd., 2009), Chapter 2.
[80] See Section 1.3.2 *supra*.

by economic, political, legal and socio-economic issues and challenges that prevail in the host country.[81] Some of the specific issues impacting the implementation of CDM projects in host countries are: taxation and financial services regulation, such as the classification of the CERs generated from the implementation of the project and whether it is classified as a security or a commodity,[82] taxation of CERs generated by projects, whether discriminatory or not, and taxation on revenue from CER sales;[83] domestic environmental laws such as environmental approvals required during the construction and operation of the project and the liability of project participants for environmental harms caused by the implementation of the project;[84] and domestic property laws such rights, conditions or restrictions with respect to the land on which CDM projects are built, and customary land title and restrictions on foreign ownership of land.[85] In addition, implementation of CDM projects will be negatively affected if the host country lacks strong and functional institutional and infrastructural structures such as stable government, rule of law, and access to court to seek redress. For example, the tax regime of the host country almost entirely translates into higher cost of project implementation. Therefore, if the tax regime of the host country is perceived by CDM investors and participants as being too rigid, it may discourage investors.

The challenges to the successful implementation of CDM projects can be classified as CDM specific barriers or general national barriers. CDM specific barriers such as delays in national CDM approval processes can be resolved by, for example, removing the bottlenecks in host

[81] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues* (Roskilde: UNEP Risoe Centre on Energy, Climate, and sustainable development, 2009), 12-14. See also J. Ellis and S. Kamel , 'Overcoming barriers to Clean Development Mechanism projects', 19. An unclassified Report by the Organisation for Economic Co-Operation and Development (OECD) available at http://www.oecd.org/environment/climatechange/38684304.pdf (OECD website,

[82] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 13. The classification is important because the regulation of securities is often stricter than the regulation of commodities trading, which in turn produces higher transaction costs for project participants.

[83] *Ibid*.

[84] *Ibid*. at 14.

[85] *Ibid*. at 13.

country approval procedure.[86] However, national barriers that are general to project implementation, such as political and economic stability are more difficult to overcome by host countries.[87]

The above are issues that are beyond the control of the CDM and are entirely within the control of the host country. Obviously, the CDM can only provide tools, such as the V & R requirements, that can lead to policy reforms and promote sustainable development within host countries, but, it cannot solve fundamental issues and challenges which are specific to host countries, and are not connected to CDM projects. Furthermore, this thesis acknowledges that the CDM is not the exclusive solution to promoting and achieving sustainable development in developing countries. There are other international efforts such as national action plan on achieving sustainable development and national strategies to reduce poverty. [88] In addition, there are other international treaties that aim to promote sustainable development in developing countries, such as the Montreal Protocol on Substances that deplete the Ozone Layer (protocol to the Vienna Convention for the Protection of the Ozone Layer). The Convention and its Protocol are designed to protect the ozone layer, by phasing out the production of substances believed to be responsible for ozone depletion. This encourages the transfer of environmentally safe and sound technology (EST) to developing countries, which in turn promotes sustainable development.[89]

[86] J. Ellis and S. Kamel , 'Overcoming barriers to Clean Development Mechanism projects', 9.
[87] *Ibid.*
[88] See Organisation for Economic Co-Operation and Development (OECD), Strategies *for Sustainable Development: Guidance for Development Co-operation* (Paris: OECD Publication Services, 2001), 29-32.
[89]Protocol on Substances that deplete the Ozone Layer (Montreal) 16 September1987, in force 1 January 1989. Reprinted in 26 ILM 154.

1.6 The CDM Project Cycle

1.6.1 Eligibility to Participate

Annex I and non-Annex I Parties to the KP can participate in the mechanism.[90] To participate, both the Annex I Party and the non-Annex I Party must participate voluntarily, have ratified the Protocol and have designated a national authority, known as the DNA.[91] In addition, private and public entities of both Parties can participate and acquire CER credits from CDM projects.[92]

1.6.2 Rules Governing the CDM

The rules governing the CDM are contained in the CDM Rules. It establishes the procedure for fulfilling the V & R requirements and the implementation of the CDM. For example, the CDM Rules outline the V & R requirements for proposed CDM projects, as well as the role and functions of CDM actors.

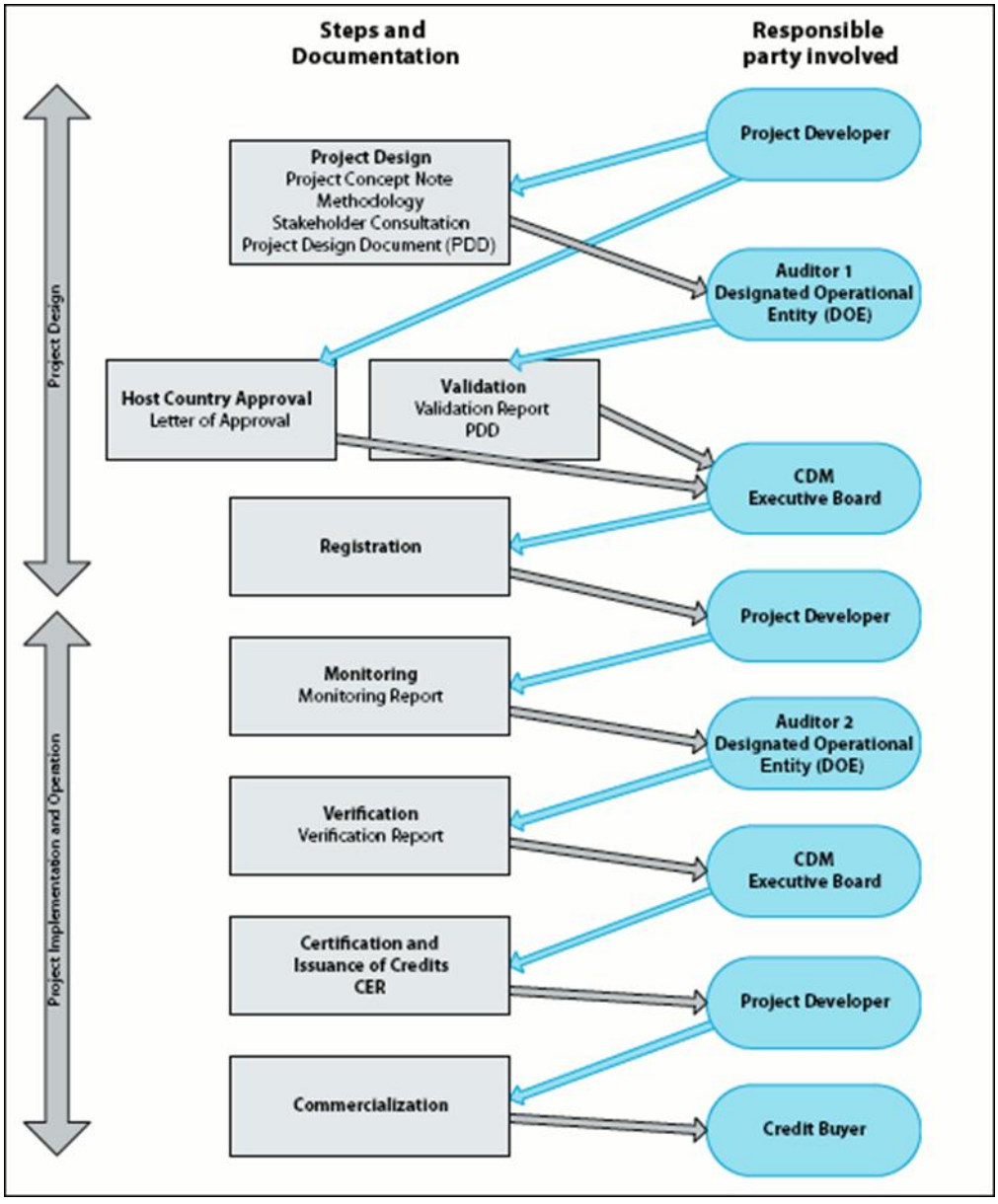
1.6.3 Key Actors Involved in the CDM and the CDM Registration Process[93]

The CDM is supervised by the EB, which is under the authority and guidance of the Conference of the Parties serving as the Meeting of the Parties to the Protocol (COP/MOP).[94] The DOE is an independent body that acts on behalf of the EB. It validates and recommends that proposed projects be registered as CDM projects. The DNA is the national agency in charge of CDM activities and project approval.[95] Annex I and non-Annex I Parties must

[90] Article 12(3) KP.
[91] CDM rules, Annex, Paragraphs 28, 29 and 30. Also see Chapter 3, Section 3.2.1 for the analysis of the participation requirement.
[92] Article 12(9) KP. This is dependent upon obtaining DNA approval for participation.
[93] See Chapter 4 for examination and discussion on the institutional bodies that govern the CDM.
[94] Article 12(4) KP and CDM rules Annex, Paragraph 5.
[95] H. Olivas, 'Evolution of national authorities' in C. Figueres, (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries*, 53- 61.

establish a DNA in order to participate in the CDM.[96] The CDM registration process and the institutional bodies responsible for each of the steps are outlined in Figure 1.1.below.

Figure 1.1: The CDM Project Cycle



Source: A. Kollmuss, 2008[97]

[96] CDM rules, Annex, Paragraph 29.

[97] A. Kollmuss *et al*., 'Making sense of the voluntary carbon market: a comparison of carbon offset standards' (2008). A Report prepared for WWF Germany, http://wwf.panda.org/what_we_do/footprint/climate_carbon_energy/climate_change/publications/?126700/A-Comparison-of-Carbon-Offset-Standards-Making-Sense-of-the-Voluntary-Carbon-Market (WWF Website, 15/5/2011).

1.6.3 (i) CDM Project Registration Process

Validation is the process of independent evaluation of a project by a DOE against the V & R requirements,[98] and registration is the formal acceptance by the EB of a validated project as a CDM project. The process of validation and registration is the prerequisite for the verification, certification and issuance of CERs related to a CDM project.[99]

There are three documents required for the validation and registration of a proposed CDM project: the PDD; the validation report; and the LoA from the DNA of the host country confirming that the proposed CDM project will assist it in achieving sustainable development.[100] To validate a project, the DOE selected by the project participants conducts a desk review of the PDD and other supporting documents, as well as a site visit, if deemed necessary. If the DOE is not satisfied with the fulfilment of the V & R requirements, it may request further action and an amendment to the PDD or it may refuse to validate the proposed project. Refusal to validate a proposed project is very rare. Although there is no evidence for this statement, this author speculates that it is because the DOE is paid by the project participants for its validation services. Therefore, it is safe to assume that the DOE will work with project participants to ensure that proposed CDM projects are validated. The research for this thesis has not discovered any instance where the DOE has refused to validate a proposed project.[101] Upon the completion of the desk review (and site visit where

[98] *Ibid*. Paragraph 35.
[99] *Ibid*. Paragraph 36.
[100] A unilateral project only requires a LoA from the CDM host country while an Annex I sponsored project requires LoAs from both the Annex I country and the non-Annex I host country. Note that the EB at its 18th meeting agreed that the registration of a project activity can take place without providing an Annex I Party LoA at the stage of registration. However, before an Annex I Party acquires CERs from such a project, it will submit a LoA. See CDM-EB-18 paragraph 57, Executive Board of the Clean Development Mechanism Eighteenth Meeting Report http://cdm.unfccc.int/EB/018/eb18rep.pdf (UNFCCC Website, 1/3/2011).
[101] See Chapter 4, Section 4.2.5 for further discussion on the possible conflict of interest situation that could

undertaken), the DOE will issue a validation report. The validation report contains confirmation that the V & R requirements for CDM projects have been fulfilled by the project participants.[102]

The final validation report is submitted to the EB with a request that the proposed project be registered as a CDM project.[103] Upon appraisal, the EB may approve the project for registration, request a project review, or reject the proposed project.[104] A project will be considered registered 8 weeks after the date of receipt of the request for registration by the EB, unless a Party involved in the project or at least three members of the EB express concerns,[105] in which event, the project enters a review phase. The EB must complete its review within 30 days.[106] Once a project has been registered, it enters into the implementation and the monitoring stage.

1.7 Alternatives to the CDM: Voluntary Emission Reduction (VER) Standards

In addition to the CDM, there are other carbon standards that regulate emission reduction projects. The differences between these and the CDM are that: the projects implemented under the various standards are implemented voluntarily; some of the standards have stricter rules than the CDM; they require additional steps before a project can be registered or certified by them; and the credits earned from such projects cannot be used for compliance

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result from this.

[102] Decision 3/CMP.1 Annex, Paragraphs 37(a-g) and 40(a). See Chapter 3 for a discussion of the V & R requirements for CDM projects.

[103] The form is titled 'CDM Project Activity Registration Form' F-CDM-REG. http://cdm.unfccc.int/Reference/PDDs_Forms/Registration/reg_form01_v02.pdf (UNFCCC Website, 4/6/2011).

[104] Decision 3/CMP.1 Annex, Paragraph 41. A proposed project that is not accepted may be reconsidered for validation and subsequent registration, after appropriate revisions, provided that it follows the procedures and meets the requirements for validation and registration, including those related to public comments. Ibid. Paragraph 42.

[105] *Ibid*. Paragraph 41.

[106] See Decision 4/CMP.1 Guidance Relating to the Clean Development Mechanism, Annex III for the procedure for review of proposed CDM projects.

purposes. However, like the CDM, these projects earn credits for each tonne of CO_2 avoided or reduced as a result of the implementation of the project. VER projects are usually undertaken voluntarily by businesses and entities.

The various VER standards ensure quality and a robust programme of certification and verification for voluntary projects. The GS is a premium label for CDM projects and voluntary carbon offset that is committed to promoting sustainable development through the carbon offset markets.[107] Furthermore, the GS is considered the highest level of VER certification.[108] The process of certification under the GS involves the entire CDM V & R requirements, in addition to further steps that ensure that projects promote sustainable development.[109] The GS certification of CDM projects is limited to energy efficiency and renewable energy projects.[110] This is because these types of CDM projects are considered important for climate change mitigation and are more likely to promote sustainable development.[111] A CDM project that wishes to be certified as a GS CDM project goes through the required CDM V & R process in addition to a strict set of guidelines stipulated by the GS Foundation, in order to achieve GS certification.[112] Such certification is however

[107] 'About Gold Standard' http://www.cdmgoldstandard.org/About-Gold-Standard.62.0.html (Gold Standard Foundation Website, 16/1/ 2011). Also see Chapter 3 for further discussion on the Gold Standard. Chapter 3 examines the requirements of the CDM Gold Standard as a yardstick with which to measure the ability of the current V & R requirements to assist CDM host countries in achieving sustainable development.
[108] See the following: W. Streck *et al*., 'Further development of the project based mechanisms in a post-2012 regime', 93. Final report of the project commissioned by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. http://www.wupperinst.org/uploads/tx_wiprojekt/CDM_Post_2012_Study.pdf (Wuppertal Institute for Climate, Environment and Energy 16/1/2012); and E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America (*London: Earthscan, 2009), 134.
[109] Ecofys *et al*., 'The Gold Standard Toolkit 2.0' (2008), 20. http://www.cdmgoldstandard.org/wp-content/uploads/2011/11/GSV2_Toolkit.pdf (Gold Standard Foundation Website, 16/1/ 2011).
[110] 'Annex C: Guidance on Project Type Eligibility' http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/Annex_C.pdf (Gold Standard Foundation Website, 16/1/ 2011).
[111] W. Sterk, *et al*., 'Further Development of the Project – Based Mechanism in a Post -2012 Regime', 14. Available at http://www.wupperinst.org/uploads/tx_wiprojekt/CDM_Post_2012_Study.pdf .
[112]An example of a Gold standard certified CDM project is the 'Kuyasa low-cost urban housing energy upgrade project, Khayelitsha' which is implemented in South Africa and was registered in 2005. http://cdm.unfccc.int/Projects/DB/DNV-CUK1121165382.34/view (UNFCCC Website, 10/3/11).

voluntary, but a CDM project certified as a GS CDM project commands a higher price in the carbon market.[113] The GS requirements will be analysed comparatively against the CDM V & R requirements, in Chapter 3 *infra*.[114] The following carbon standards also provide certification to VER projects.

Verified Carbon Standard (VCS) is a quality standard for voluntary carbon offset industry. It is based on the CDM and it establishes criteria for validating, measuring and monitoring voluntary carbon offset projects.[115] The Social Carbon Standard certifies VER projects for their contributions to sustainable development.[116] Green-e Climate programme is a certification programme for offsets offered by carbon brokers in the voluntary market. The programme complements the VER standards by ensuring that carbon brokers obtain and retire correct volumes and types of emissions reductions on behalf of customers.[117] Green-e Climate is the first and only consumer protection programme for carbon offsets. Climate, Community and Biodiversity Alliance (CCBA) is a rigorous standard for evaluating land-based carbon projects.[118] The standard registers land-based climate change mitigation projects that simultaneously generate climate, biodiversity and sustainable development benefits. The next chapter examines sustainable development generally and in the context of the CDM.

[113] This is because GS CER buyers are willing to pay a higher premium for high quality CDM projects that not only lead to reduction in emissions, but also sustainability benefits to the host community.
[114] See Chapter 3 for justification.
[115] http://www.v-c-s.org/ (VCS website, 16/4/2012).
[116] http://www.socialcarbon.org/ (Social Carbon website, 16/4/2012).
[117] http://www.green-e.org/about.shtml (Green-e website, 16/4/2012).
[118] http://www.climate-standards.org/mission/index.html (CCBA website, 16/4/2012).

CHAPTER TWO

SUSTAINABLE DEVELOPMENT AND THE CDM

"The biggest challenge for sustainable development in coming decades will be to operationalise it: to make it occur, or to make an effective transition toward it…"
- *John C. Dernbach*[119]

"If, however there is to be international accountability for achieving sustainability, whether globally or nationally, then it must be clear what the criteria for measuring this standard are…"
- *Boyle and Freestone*[120]

2.1 Introduction

The purpose of this chapter is to examine sustainable development in the context of the CDM. However, in order to do this, it is important to: briefly explore sustainable development as a concept in international law. This Chapter answers the first sub-research question: what is the meaning of sustainable development in international law and the CCR? This Chapter is divided into 2 sections. Section 2.2 discusses the meaning and institutional framework for sustainable development and examines if, and how, sustainable development is being governed and implemented in international law. Section 2.3 examines the governance and implementation of sustainable development in the CCR and it explores the meaning of sustainable development in the UNFCCC and CDM. The term 'governance' is used in this thesis to mean the role of institutions, processes, structures, and guiding

[119]J. Dernbach, 'Achieving sustainable development: the centrality and multiple facets of integrated decision-making' (2003)10 *Indiana Journal of Global Legal Studies* 247 at pg. 247.
[120] A. Boyle and D. Freestone, 'Introduction' in A. Boyle and D. Freestone (eds.), *International Law and Sustainable Development: Past Achievements and Future Challenges* (Oxford: Oxford University Press, 1999), 1 at pg. 7.

principles that provide an enabling framework for implementing commitments to sustainable development.

2.2 Sustainable Development in a Changing World[121]

The idea of sustainable development can be traced back to the United Nations Stockholm Conference on the Human Environment.[122] The Conference adopted a 'Declaration of Principles for the Preservation and Enhancement of the Human Environment' and an 'Action Plan' consisting of 109 recommendations for environmental action at the international level.[123] The conference reinforced national responsibility for environmental protection, officially recognised the need for cooperative international action and began to merge the environment into considerations for development.[124] However, the conference did not suggest a way to reconcile the competing interest of development and environmental protection, which eventually emerged as sustainable development.

Sustainable development emerged in 1987, when the World Commission on Environment and Development (WCED) (hereinafter referred to as the Brundtland Commission) published its report 'Our Common Future.' The Commission defined sustainable development as

[121]This chapter will not explore the different theoretical approaches and definitions of sustainable development. See following texts and articles on sustainable development: A. Dobson, *Green Political Thought* 4th edn. (Abingdon: Routledge, 2007); D. French, *International Law and Policy of Sustainable Development (*Manchester: Manchester University Press, 2005); K. Bosselmann, *The Principle of Sustainability: Transforming Law and Governance* (Aldershot: Ashgate 2008); S. Dresner, *The Principle of Sustainability*, 2nd edn. (London: Earthscan, 2002);T. O'Riordan, 'The politics of sustainability' in R. Turner (ed.), *Sustainable Environmental Management: Principles and Practice* (London: Belhaven , 1993); A. Ross, 'Modern Interpretations of Sustainable Development' (2009) 36 (1) *JLS* 32-54; V. Lowe, 'Sustainable development and unsustainable Arguments' in A. Boyle and D. Freestone (eds.), *International Law and Sustainable Development: Past Achievements and Future Challenges* (Oxford: Oxford University Press, 2001), 19-35; N. Schrijver and F. Weiss (eds.), *International law and Sustainable Development: Principles and Practice* (Leiden: Nifhoff, 2004); and M. Segger and A. Khalfan, *Sustainable Development Law: Principles, Practices, and Prospect* (Oxford: Oxford University Press, 2004); T. O'Riordan and Heather Voisey (eds.), *The Transition to Sustainability: The Politics of Agenda 21in Europe* (London: Earthscan, 1988).

[122] Report of the UN Conference on Human Environment. UN Doc A/CONF.48/14 (1972).

[123] *Ibid.* Also see P. Sands and P. Galizzi (ed.), *Documents in International Environmental Law 2nd edn.* (Cambridge: Cambridge University Press, 2004), 3.

[124] For instance, Principle 21 affirms the responsibilities of states to ensure that activities within their jurisdiction do not cause damage in another state or beyond national jurisdiction.

"[d]evelopment which meets the needs of the present without compromising the ability of future generations to meet their own needs."[125] In its definition, the Commission goes on state that overriding priority should be given to the essential needs of the world's poor.[126]

2.2.1 Issues with the Commission's Definition

Although there is a general consensus amongst nations and institutions that sustainable development is an ideal that all should strive to achieve,[127] its precise meaning, principle and implementation remains elusive in international law. Consequently, this has opened the term up to several debates. In addition to the definition advanced by the Brundtland Commission, many other authors and writers also advanced various definitions of the concept. In 1996, Fowke and Prasad identified at least 80 different, often competing or contradictory, definitions of sustainable development.[128] Some definitions favour strong sustainability while others favour weak sustainability.[129] Strong sustainability is based on the belief that 'natural capital' is not substitutable with 'man-made capital'.[130] On the other hand, weak sustainability is based on the belief that 'natural capital' (non-renewable resources) can be substituted with 'man-made capital' (machineries, roads ports etc.) and that what matters to future generations is the total stock available to them and not whether it is 'natural' or 'man-

[125] World Commission on Environment and Development (WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), 43.
[126] *Ibid*.
[127] E. Neumayer, *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms* 3rd edn. (Cheltenham: Edward Elgar Publishing Limited, 2010), 1.
[128] R. Fowke and D. Prasad, 'Sustainable development, cities and local government' (1996) 33 *Australian Planner*, 61. Also see A. Ross 'Why legislate for sustainable development? an examination of sustainable development provisions in UK and Scottish Statutes' (2008) 20 *JEL* 35 at 39.
[129] K. Bosselmann, *The Principle of Sustainability: Transforming Law and Governance*, 26. See also: D. Pearce *et al*., *Blue Print 3: Measuring Sustainable Development (*London: Earthscan, 1993), 16; A. Ross, 'It's time to get serious—why legislation is needed to make sustainable development a reality in the UK' (2010) 2 *Sustainability* 1101 at pg. 1106; A. Rieu -Clarke, *International Law and Sustainable Development: Lessons from the Law of International Watercourses* (London: IWA Publishing, 2005), 56; and C.Stone, *Should Trees Have Standing? : and other Essays on Law, Morals and the Environment* (New York: Oceana, 1996).
[130] E. Neumayer, *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms,* 1. See also: E. Goldsmith *et al.*, *Blueprint for Survival* (London: Tom Stacey, 1972); D. Meadows *et al.*, *The Limits to Growth* (New York: Universal Books, 1972); H. Daly, 'Elements of environmental macroeconomics' in D. Constanza (ed.), *Ecological Economics: The Science and Management of Sustainability* (New York: Columbia University Press, 1991), 32-46.

made' capital.[131]

In Bosselmann's summary of both approaches, he opines that criticism of the growth paradigm inspired the first camp's vision of strong sustainability as the counter-model to economic domination, while the position of the weak sustainability camp became popular with all political affiliations because they consider growth (development) as an integral part of the new concept of sustainable development (environment) .[132] However, in recent years, the focus of literature has moved from attempting to define what sustainable development is, to describing it. For example, the International Law Association's (ILA) New Delhi Declaration did not attempt to define sustainable development, but rather states that "[t]he objective of sustainable development involves a comprehensive and integrated approach to economic, social and political processes, which aims at the sustainable use of natural resources of the Earth and the protection of the environment on which nature and human life, as well as social and economic development depend, … with due regard to the needs and interests of future generations.[133] French suggests that "[s]ustainable development is founded upon the argument that economic development and environmental protection are not mutually exclusive goals, but that both must be concurrently attained if improvements are to be seen in global human welfare."[134] Bosselmann proffers a more radical view of sustainable development. He suggests that in order for sustainable development to have any meaning, it is crucial to re-emphasise the ecological core of the concept and that ecology should be the foundation on which the other pillars of sustainable development – the social and economic

[131] E. Neumayer, *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms*, 1. See also K. Arrow *et al.*, 'Economic growth, carrying capacity and the environment' (1995) 268 *Science* 520-521; D. Pearce *et al., Blueprint for a Green Economy* (London: Earthscan, 1989); and P. Bartelmus, *Environment, Growth and Development: The Concepts and Strategies of Sustainability* (New York: Routledge, 1994) .
[132] K. Bosselmann, *The Principle of Sustainability: Transforming Law and Governance*, 26.
[133] ILA 'New Delhi Declaration of Principles of International Law Relating to Sustainable Development' (2002) 2(2), *International Environmental Agreements: Politics, Law and Economics* 209-216.
[134] D. French, *International Law and Policy of Sustainable Development*, 2

components - should rest.[135] He argues that placing the three pillars of sustainable development on the same level is misleading, and deviates from the core concept of sustainable development.[136]

Despite their differences, the common thread that runs through these definitions is that: sustainable development is an ideal that should be attained by all; the needs of the present and future generations must be taken into account in decision making; poverty must be eradicated and priority should be given to the needs of the world's poor; the environment must be protected and its resources used in a sustainable manner; and in addition, there must be an integration of economic, social and environmental protection to achieve sustainable development. Therefore, the concept of sustainable development establishes that the present generation has a responsibility to future generations to use natural resources in a sustainable manner, such that future generations have access to the same resources to aid their own development process. It also seeks to encourage the integration of these considerations into policy choices, as well as into everyday human living choices. Ultimately, sustainable development aims to achieve an acceptable outcome for present and future generations.[137]

Despite the unsettled nature of sustainable development, it is generally accepted that sustainable development consists of three core pillars of economic and social development and environmental protection and that these three pillars should be mutually reinforcing and

[135] K. Bosselmann, *The Principle of Sustainability: Transforming Law and Governance*, Chapter 1.
[136] *Ibid.* at 11. According to him, 'sustainable development does not call for a balancing act between the needs of people living today and the needs of people living in the future, nor for a balancing act between economic, social and environmental needs. The notion of sustainable development… calls for development based on ecological sustainability in order to meet the needs of people living today and in the future.
[137] D. Tarlock, 'Ideas without institutions: the paradox of sustainable development' (2001) 9 *Indian Journal of Global Legal Studies*, 42.

integrated to achieve sustainable development.[138] However, it is the varying priority afforded to each of the three pillars by different interpretations of sustainable development which creates the unsettling and vague nature of the term. Subsequent international law declarations and other soft law documents have gone on to affirm the three pillars. For example, the 'Copenhagen Declaration on Social Development and Programme of Action' made the explicit linkage between social and economic development and environmental protection as essential pillars that have to be integrated to achieve sustainable development.[139] Paragraph 6 of the Declaration states that "[w]e are deeply convinced that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development..."

However, apart from affirming the three pillars of sustainable development, international law declarations and other soft law documents also provide, in many ways, a new conceptualisation of sustainable development. Subsequent international law declarations and soft law documents have broadened the pillars of sustainable development to include such issues as good governance and poverty eradication. According to French, these various declarations and soft law documents expand the concept of sustainable development.[140] For example, in 2002, while Paragraph 2 of the Plan of Implementation of the World Summit on

[138] See the following: J. Vogler, 'The international politics of sustainable development' in G. Atkinson et al (eds.), *Handbook of Sustainable Development* (Cheltenham: Edward Elgar Publishing Limited, 2007), 430 at 437; J. Strachan *et al*., *The Plain Language Guide to the World Summit on Sustainable Development* (London: Earthscan, 2005), 3; T. Strange and A. Bayley, *Sustainable Development: Linking Economy, Society, Environment* (Paris, OECD Insights, 2008), 27; B. Dalal-Clayton and S. Bass, *Sustainable Development Strategies: A Resource Book* (London: Earthscan, 2002), 12.

[139] Copenhagen Declaration on Social Development and Programme of Action of the World Summit for Social Development, 12 March, 1995, UN Doc. A/CONF.166/9 (Copenhagen Declaration on Social Development. See also D. Magraw and L. Hawke, 'Sustainable Development' in D. Bodansky *et al*. (eds.), *The Oxford Handbook of International Environmental Law* (Oxford: Oxford University Press, 2007), 613 at pg. 617; D. French, *International Law and Policy of Sustainable Development*, 22.

[140] French adopts a slightly different approach in defining the pillars or components of sustainable development. He suggests that sustainable development can be divided into four core elements of environment, economy, equity and empowerment. See D. French, *International Law and Policy of Sustainable Development*, 22.

Sustainable Development (WSSD) reaffirms the continued efforts to promote the integration of the three components of economic development, social development and environmental protection as interdependent and mutually reinforcing pillars, it went a step further by including poverty eradication, changing unsustainable patterns of production and consumption, and protecting and managing the natural resource base of economic and social development, as overarching objectives of, and essential requirements for, sustainable development.[141] Also, the outcome of the comments received in preparation for the recently held Rio+20's[142] theme on institutional framework for sustainable development states that good governance should be seen as a fourth pillar of sustainable development.[143] The outcome of Rio+20, 'The Future We Want', in its means of implementation of the sustainable development goals states in Paragraph 252 that "…good governance and the rule of law at the national and international levels are essential for sustained, inclusive and equitable economic growth, sustainable development and the eradication of poverty and hunger."[144]

2.2.2 Principles of Sustainable Development

The principles of sustainable development are important for the implementation of sustainable development.[145] This is because the principles of sustainable development provide a framework for the implementation of sustainable development. However, just as

[141] Programme of Implementation of the World Summit on Sustainable Development, UN Doc. A/CONF.199/20 (2002).
[142] http://www.earthsummit2012.org/conference/themes (Earth Summit 2012 website 3/4/2012). The conference marks the 20th anniversary of 1999 UNCED and the 10th anniversary of the 2002 WSSD.
[143] R. Gardiner, 'Comments on the Prep Com 4 text on "Institutional framework for Sustainable Development", 2. Available at www.earthsummit2002.org/es/issues/.../PC4-institutional-framework (Earth Summit website 3/4/2012).
[144] United Nations Conference on Sustainable Development, Rio De Janeiro, Brazil 20-22June 2012 A/CONF.216/L.1*.
[145] D. French, *International Law and Policy of Sustainable Development*, 22. See also: A. Rieu-Clarke, *International Law and Sustainable Development: Lessons from the Law of International Watercourses*, 59.

with its definition, the principles and normative content of sustainable development remain unsettled in international law.[146] For instance, there have been various attempts to develop and set out the principles that will guide the governance and implementation of sustainable development in international law.[147] Some of the studies include: the United Nations Commission on Sustainable Development (UNCSD)'s report on the Principles of International Law of Sustainable Development;[148] the International Union for Conservation of Nature (IUCN) Draft Covenant on Environment and Development;[149] and the ILA's New Delhi Declaration of Principles of International Law Relating to Sustainable Development.[150] An analysis of the various studies indicates that while they may differ to some extent, there are some recurrent themes amongst the three studies, such as: the precautionary principle; public participation and access to information and justice; right to development; the right to a healthy environment and the protection of the environment by preventing environmental harm; integration of the pillars of sustainable development and the interrelationship between them; sustainable use of natural resources; eradication of poverty; and equity.

International law scholars have also contributed to the debate on the principles of sustainable development in international law. For example, Sands, and Magraw and Hawke, list the following as the four core principles of sustainable development: inter-generational equity;

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[146] M. Fitzmaurice, *Contemporary Issues in International Environmental Law* (Cheltenham: Edward Elgar Publishing Limited, 2009), 69. See also: A. Boyle and D. Freestone, 'Introduction' in A. Boyle and D. Freestone, (eds.), International *Law and Sustainable Development: Past Achievements and Future Challenges*, 1.

[147] A. Rieu -Clarke, *International Law and Sustainable Development: Lessons from the Law of International Watercourses*, 46.

[148] UNCSD, Report of the expert group meeting on identification of principles of international law for sustainable development, Geneva, Switzerland, September 26-28, 1995. http://www.un.org/documents/ecosoc/cn17/1996/background/ecn171996-bp3.htm (UN Website, 16/1/2011.

[149] IUCN, '1995 IUCN draft covenant on environment and development' 4th edn. http://data.iucn.org/dbtw-wpd/edocs/EPLP-031-rev3.pdf , (IUCN Website, 16/3/ 2011). Also see N. Robinson, 'Colloquium: the Rio environmental law treaties IUCN's proposed Covenant on Environment & Development' (1995) 13 *Pace Envtl. L. Rev.* 133-157.

[150] ILA 'New Delhi declaration of principles of international law relating to sustainable development' (2002) 2(2), *International Environmental Agreements: Politics, Law and Economics* 209-216.

intra-generational equity; the protection of the environment; and the integration of economic, social and environmental policies.[151] Boyle and Freestone identify the following as principles of sustainable development: sustainable utilisation of natural resources; integration of environmental protection and economic development; inter and intra-generational equity; public participation in environmental decision-making; and EIA.[152] Taken together, the various principles proposed by the several studies provide a normative content for sustainable development.

Despite the differences about the principles of sustainable development, various international law scholars argue that the principle of integration is the most significant and relevant for implementation of sustainable development.[153] According to Voigt, "[d]espite the variability of approaches to categorizing the elements of sustainable development, the principle of integration remains the most fundamental and operationally significant."[154] Similarly, Segger and Khalfan advocate that integration can resolve the differences concerning the principles of sustainable development, and guide the effective integration of the environmental, social and economic aspects of development.[155] Dernbach asserts that the principle (integration) holds the other principles together in an attempt to operationalise sustainable development,[156] and

[151] P. Sands, *Principles of International Environmental Law*, (Cambridge: Cambridge University Press, 2003), 253 and D. Magraw and L. Hawke, 'Sustainable development' in D. Bodansky *et al.* (eds.), *The Oxford Handbook of International Environmental Law*, 619- 621.
[152] A. Boyle and D. Freestone, 'Introduction' in A. Boyle and D. Freestone (eds.), *International Law and Sustainable Development: Past Achievements and Future Challenges*, 9-18.
[153] See: P. Sands, *Principles of International Environmental Law*, 263; M. Segger and A. Khalfan, *Sustainable Development Law: Principles, Practices, and Prospect*, 97; J. Dernbach, (2003), 248; and C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 36.
[154] C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 36.
[155] M. Segger and A. Khalfan, *Sustainable Development Law: Principles, Practices, and Prospect*, 97.
[156] J. Dernbach, (2003), 248.

that the other principles, such as the precautionary principle, intergenerational equity, and public participation, all depend on integrated decision-making.[157]

Although there remain questions about the definition, principles, the interpretation and application of the principles and the legal implications of such principles, there is a growing, though not universal, acceptance of a legal status for sustainable development with principles that can aid its implementation. Many international, regional and national instruments and organisations adopt sustainable development as a goal or guiding principle.[158] Lowe is however, not of the persuasion that sustainable development has attained a legal status in international law. According to him, "…whatever the label might be, it is itself not a norm; it can be no more than a name for a set of norms."[159]

Despite the wide acceptance of sustainable development, this does not seem to have been translated into practical action and there appears to be a lack of effective governance and implementation of sustainable development at all levels.[160] The next sub-section examines this issue in greater detail.

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[157] Ibid.

[158] Sustainable Development is the underlying theme of four of the five international instruments adopted at UNCED: the United Nations Framework Convention on Climate Change (UNFCCC 1992); the Rio Declaration which contains 27 key principles to guide the integration of environment and development policies; Agenda 21, which is a global plan of action for the implementation of sustainable development; and the Convention on Biological Diversity (CBD 1992) an agreement that emphasises sustainable use of species and ecosystem diversity. See: Bosselmann, *The Principle of Sustainability: Transforming Law and Governance*, 24; M. Segger and A. Khaflan, *Sustainable Development Law: Principles, Practices, and Prospect*, 45; and Dresner, *The Principle of Sustainability*, 38.

[159] V. Lowe, 'Sustainable development and unsustainable arguments' in A. Boyle and D. Freestone, (eds.), *International Law and Sustainable Development: Past Achievements and Future Challenges*, 26.

[160] According to Stoddard and Cruickshank, "…global governance for sustainable development is no longer 'fit for purpose'". H. Stoddard and E. Cruickshank (eds.), A *Pocket Guide to Sustainable Development Governance* (2nd edn), 6. Available at http://www.stakeholderforum.org/fileadmin/files/PocketGuidetoSDGEdition2webfinal.pdf (Published online by the Commonwealth Secretariat, 2012).

2.2.3 Governance and Implementation of Sustainable Development in International Law

Governance has always been recognised as a critical tool for advancing sustainable development at all levels, through the role of global, regional, national and local institutions.[161] In recent years, many international treaties have stated sustainable development as their overall objective, part of their purpose, or an obligation to be achieved by the Parties to a treaty. Most of these treaties are in the field of international environmental and economic law.[162] For instance, Article 8(e) of the United Nations Convention on Biological Diversity (CBD) states that Parties should [p]romote environmentally sound and sustainable development.[163] Reference to sustainable development is also found in international instruments relating to international economic law and policy. For instance, the Preamble to the 1994 Agreement establishing the World Trade Organisation (WTO) recognises that trade and economic enterprise should be conducted with consideration for, *inter alia,* raising standards of living and ensuring full employment and large and steadily growing real income, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, with a view to protecting and preserving the environment.[164]

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[161] Ibid.
[162] P. Sands, *Principles of International Environmental Law* 257-259.
[163] Convention on Biological Diversity (Rio de Janeiro) June 1992, in force 29 December 1993. Reprinted in (1992) 31 ILM 822. See the preamble to the Convention and also Articles 8, 11, 12, 16, 17 and 18. Also see Article 1 of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Montreal) 29 January 2000, in force 11 September 2003. Reprinted in 39 ILM 1027 (Biosafety Protocol). In addition, see the Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (Paris) 17 June 1994, in force 26 December 1996. Reprinted in (1994) 33 ILM 1328 (1994 Desertification Convention) Arts 4 and 5.
[164]See Paragraph 1 of the Preamble to the Agreement Establishing the World Trade Organization, Marrakesh, 15 April 1994, in force, 1 January 1995. Reprinted (1994) 33 ILM 1125.

A number of international organisations, programmes and bodies govern sustainable development at the global level. For example, international organisations established by multinational environmental agreements (MEAs), legally binding treaties and conventions with their own secretariats, such as the UNFCCC's COP/MOP and its EB, the Convention on Biological Diversity (CBD) and its COP, the UN Convention to Combat Desertification (UNCCD) and its COP. There are also a range of UN commissions, including the UN Commission on Sustainable Development (CSD), United Nations Environment Programme (UNEP), and the United Nations Development Programme (UNDP) that govern sustainable development.[165]

However, notwithstanding all the instruments which incorporate or the number of international organisations, programmes and bodies established to govern sustainable development, there is growing concern amongst the global community that there are challenges with the implementation of sustainable development, as an overarching framework or guiding principle.[166] In fact, it seems the international community, international organisations and national governments remain uncertain of ways to ensure its effective implementation.[167] The reasons for the lack of implementation of sustainable development includes, *inter alia*:

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[165] See the following on sustainable development and international environmental governance: J. Speth and P. Haas, *Toward Planetary Stewardship in Global Environmental Governance* (Washington, DC: Island Press, 2006); F. Dodds *et al*, 'The Governance gap', in Only One Earth: The Long Road via Rio to Sustainable Development (London: Earthscan, 2012; S. Oberthür, (2002) 'Towards a substantive reform of global environmental governance – against the creation of a World Environment Organization. http://www.worldsummit2002.org/texts/oberthuer.pdf (19/3/2012); S. Prestigiacomo and J. Michuki, (2009) 'Why we need a World Environment Organisation'. http://www.guardian.co.uk/environment/cif-green/2009/oct/28/worldenvironment-Organisation (19/3/2012); and The Global Sustainability Panel Report (2012), http://www.un.org/gsp/report.

[166] On challenges facing the global policy process on the implementation of sustainable development, see A. Kallhauge *et al*. (eds), *Global Challenges: Furthering Multilateral Process for Sustainable Development* (Sheffield: Greenleaf Publishing, 2005).

[167] See the following: D. French, *International Law and Policy of Sustainable Development*, 33; D. Tarlock, (2001), 48. According to Drexhage and Murphy, despite its overwhelming acceptance as a guiding principle for

(i) Lack of coherence and co-ordination amongst the different organisations governing sustainable development is one of the major setbacks for the effective governance and implementation of sustainable development at all levels. As stated earlier, there are a multitude of international organisations, programmes and commissions that govern sustainable development. While this setup has its advantages, there is bound to be fragmented governance and implementation. For instance, some of the UN agencies have been criticised for focusing on only one aspect of sustainable development. Each of these organisations and bodies have their objectives and mandates and they would sometime act independently, and are more likely to implement one or two pillars of sustainable development and neglect the other.[168] For example, the UNCSD has been criticised for focusing on the environment aspect of sustainable development alone, and not effectively promoting the three pillars of sustainable development.[169]

(ii) Another major setback is the lack of integration of the three pillars of sustainable development to achieve an overarching goal.[170] For example, the Millennium Development Goals (MDGs) have been criticised for the emphasis on the social aspect of sustainable development over the other pillars of sustainable

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governments, businesses, and the civil society, sustainable development remains vague, and its implementation has been difficult. J. Drexhage and D. Murphy, 'Sustainable development: from Brundtland to Rio 2012', 2. Background Paper prepared for consideration by the High Level Panel on Global Sustainability at its first meeting, 19 September 2010). http://www.un.org/wcm/webdav/site/climatechange/shared/gsp/docs/GSP1-6_Background%20on%20Sustainable%20Devt.pdf , (UN Website, 16/3/ 2011).

[168] H. Stoddard and E. Cruickshank (eds.), A *Pocket Guide to Sustainable Development Governance* (2nd edn), 12-13.

[169] P. Chasek, 'The UN Commission on Sustainable Development: the first five years' in P. Chasek (ed.), *The Global Environment in the Twenty-first Century: Prospects for International Cooperation*, (New York: United Nations University Press, 2000), 378 at 394. According to Chasek, "… the CSD has given insufficient attention to the key linkages environment and development issues." Also see J. Drexhage and D. Murphy, 'Sustainable Development: From Brundtland to Rio 2012', 13.

[170] Integration is relevant to the success of sustainable development. In fact, sustainable development has been described as an inherently integrative concept. S. Jodoin, 'The Principle of Integration and Interrelationship in relation to Human Rights and Social, Economic and Environmental Objectives', 3. Draft paper available at http://www.worldfuturecouncil.org/fileadmin/user_upload/papers/CISDL_P6_Integration.pdf . (CISDL Website, 10/05/2012).

development; only one of its eight goals is dedicated to the environmental aspect of sustainable development.[171]

(iii) Also, the global sustainable development process has little, if any jurisdiction over the economic aspect of sustainable development. This is because this aspect of sustainable development is usually governed by intergovernmental or regional organisations, such as the World Trade Organisation (WTO), Asia-Pacific Economic Cooperation (APEC) and Organisation of Petroleum Economic Community (OPEC), which have been accused of being less open and more influential.[172] Most of the international organisations involved in the governance of sustainable development have specific objectives and mandates which are usually related to the social or environmental pillars of sustainable development.

International law scholars have identified different reasons for the lack of implementation of sustainable development at both the international and national arena. Some of the reasons proffered for the challenges in translating sustainable development into practical action are: little understanding of sustainable development and its role in governance;[173] a disconnect between the adoption of sustainable development as a policy tool and the institutional structures necessary to implement it;[174] lack of political will on the part of the international

[171] Goal 7 of the MDGs commits to ensuring environmental sustainability. United Nations General Assembly Resolution 2 Session 55 A-RES-55-2. Also see N. Harada, 'Campaign for a global environmental organization: a French perspective', (2003). Paper prepared for Global Environmental Governance: the Post-Johannesburg Agenda, Yale Center for Environmental Law & Policy, 5. http://www.agirpourlenvironnement.org/pdf/harada.pdf (Agir pour l'Enviroment website, 16/4/2012). Also see Drexhage and Murphy, 'Sustainable development: from Brundtland to Rio 2012 , 2.

[172] H. Stoddard and E. Cruickshank (eds.), A *Pocket Guide to Sustainable Development Governance* (2nd edn.), 14.

[173] A. Ross, (2010), 1108.

[174] D. Tarlock, (2001), 39. According to Tarlock, "[l]aw can give the concept of sustainable development legitimacy, but only an institutional infrastructure can actually implement the idea by applying it to specific resource choices." Although Tarlock's article is based on the effective implementation of sustainable development at the national level, its findings ring true for the implementation of sustainable development generally.

community to implement sustainable development;[175] a disconnect between the wide-ranging goals and policies of multilateral processes such as the CCR and national action;[176] and sustainable development still being rooted in the environmental agenda.[177]

The next section considers the governance and implementation of sustainable development in the CCR, especially in the CDM process. The effective governance and implementation of sustainable development is vital, given the impact of climate change on sustainable development and also because as stated in Chapter 1, climate change and sustainable development are linked and inseparable. As the IPCC notes, "[i]t is no longer a question of whether climate change policy should be understood in the context of sustainable development goals; it is a question of how."[178] Consequently, whatever may be regarded as the meaning and nature of sustainable development generally, the fact remains that it is one of the key principles of the CCR, as well as one of the main objectives of the CDM. Furthermore, Drexhage and Murphy observe that, "… climate change has emerged as the *de facto* proxy for addressing sustainable development issues... In many respects climate change has determined what a sustainable development approach to implementation would look like."[179]

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[175] D. French, *International Law and Policy of Sustainable Development*, 34. Also see: M. Parry *et al.* (eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability* (Cambridge: Cambridge University Press, 2007), 820; and S. Bass and B. Dalal-Clayton, 'New thinking and time for action' in B. Dalal-Clayton *et al*. (eds), *Stakeholders Dialogue on Sustainable Development Strategies Lessons, Opportunities and Developing Country Case Studies* (London: International Institute for Environment and Development, 2002), 7 at pg. 12.
[176] Drexhage and Murphy, 'Sustainable development: from Brundtland to Rio 2012 , 2.
[177] P. Chasek, 'The UN Commission on Sustainable Development: the first five years' in P. Chasek (ed.), *The Global Environment in the Twenty-first Century: Prospects for International Cooperation*, 378 at pg. 394.
[178] J. Sathaye *et al.*, 'Sustainable development and mitigation' in B. Metz *et al.* (eds.), *Climate Change 2007: Mitigation* (Cambridge: Cambridge University Press, 2007), 693 at pg. 699.
[179] J. Drexhage and d. Murphy, 'Sustainable development: from Brundtland to Rio 2012', 13. Also see C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 61.

2.3 Governance and Implementation of Sustainable Development in the CCR

The IPCC predicts that climate change will exacerbate existing poverty, especially in developing countries if climate change and sustainable development are not linked. According to the IPCC, "[t]he impact of climate variability and change, climate policy responses, and associated socio-economic development will affect the ability of countries to achieve sustainable development goals. Conversely, the pursuit of those goals will in turn affect the opportunities for, and success of, climate policies."[180] Therefore, it is impossible to have a successful CCR without promoting and achieving sustainable development.[181]

However, neither the UNFCCC nor the KP defines what sustainable development is for the CCR.[182] This is an important omission given the unsettled nature of sustainable development and its various definitions which are sometimes poles apart.[183] Therefore the following section will attempt, through an analysis of relevant sections in both the UNFCCC and the KP, to determine what sustainable development is for the CCR. As a starting point, this thesis adopts the Brundtland Commission's definition of sustainable development.

2.3.1 Sustainable Development in the UNFCCC and Kyoto Protocol

Although both the UNFCCC and the KP do not define what sustainable development is for the CCR, they both uphold sustainable development as one of the guiding principles of the CCR. For instance, Article 3.4 of the UNFCCC[184] states that Parties have a right to, and

[180] J. Sathaye*et al.*, 'Sustainable development and mitigation' in B. Metz *et al.* (eds.), *Climate Change 2007: Mitigation*, 699.
[181] See: k. Halsnaes and J. Verhagen, (2007), 673; K. Halsnaes and P. Shukla, (2008), 107.
[182] This is an important omission given the unsettled nature of sustainable development and its various definitions which are sometimes poles apart.
[183] See Section 2.2.1 *supra.*
[184] See also Preamble to UNFCCC and Articles 3(5), 4(d), and 4(2) (a). See C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 65.

should, promote sustainable development. It further specifies that measures adopted in response to climate change should be integrated with their national development priorities.[185] However, this Article is ambiguous because it does not elaborate on what that 'right' entails and how it should be enforced and implemented. According to Voigt, the reason for its vagueness can be traced to the negotiating history of the UNFCCC.[186] During the negotiations leading to the UNFCCC, developing countries demanded the inclusion of a 'right to development as an inalienable human right' while developed countries insisted on a 'duty to ensure sustainable development'. However, developed countries rejected the inclusion of a 'right to development as an inalienable human right' on the grounds that it could become an avenue for developing countries to demand financial assistance from developed countries, while developing countries declined to accept the position of developed countries because they feared that a duty to sustainable development could inhibit their development aspirations.[187] Article 3.4 is therefore a middle ground for both positions. This is because Article 3.4 does not impose a duty on developing countries to ensure that they take a sustainable path to their development and it does not create an inalienable right to development. Rather it seems Article 3.4 seeks to raise awareness on the part of all parties to pursue sustainable development.

Although Article 2 of the UNFCCC does not specifically mention sustainable development,[188] it states that part of its ultimate objective, in addressing climate change, is to

[185] UNFCCC Article 3(4)
[186] C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 65.
[187] *Ibid.*
[188] Article 2 states that "the ultimate objective of this Convention and any related legal instruments that the conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner."

ensure that food production is not threatened so as to enable economic development to proceed in a sustainable manner.[189] This suggests that the UNFCCC's concept of sustainable development can, for instance, be likened to Voigt's ecological thresholds of sustainable development.[190] According to Voigt, Article 2 establishes that the protection of the global climate system is the overarching priority of the CCR, by setting limits on humans' interaction with the environment.[191] She further avers that the second part of Article 2 reflects the concept of ecological limits (overarching priority), which must be respected and which set a limit on how human activates can interfere with the climate system.[192] Therefore, while recognising the overarching priority of the global climate system, mitigating measures adopted to address climate change must ensure that economic activities proceed in a sustainable manner. Also, the preamble to the UNFCCC affirms that the response to climate change (which is an environmental protection issue) should be integrated with the other two pillars of sustainable development - social and economic development - in order to ensure that the needs of developing countries for sustained economic growth and eradication of poverty are taken into account.[193] Taken together, these paragraphs affirm that sustainable development is one of the overarching principles of the CCR and it consists of the three pillars of environmental protection, social and economic development.

Similarly, sustainable development features in the KP as one of the principles to be promoted by its Parties. Article 2 of the Protocol specifies ways in which Annex I Parties can achieve

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[189] The other ultimate objective of the UNFCCC is to achieve stabilisation of greenhouse gas concentrations in the atmosphere and that the level of stabilisation should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change.
[190] C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 40. See also K. Bosselmann, *The Principle of Sustainability: Transforming Law and Governance* (Aldershot: Ashgate 2008), Chapter 1, especially at 11.
[191] C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law*, 40.
[192] *Ibid*. 60.
[193]UNFCCC Preamble, Paragraph 20.

their quantified emission limitation and reduction commitments in order to promote sustainable development.[194] Some of the measures specified are expansion of energy efficiency,[195] the promotion of sustainable forms of agriculture,[196] and appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol.[197]

Taken together, the provisions regarding sustainable development in the UNFCCC and the KP indicate that it is a key principle of the regime and that the CCR has a policy mandate for the promotion of sustainable development as a right of all Parties. The next section will examine sustainable development and the CDM, which is the main focus of this thesis.

2.3.2 Sustainable Development and the CDM

Promoting sustainable development, through the implementation of CDM projects, is one of the dual objectives of the CDM. However, an analysis of Article 12 shows that there is no actual definition of the 'sustainable development' that CDM projects are expected to promote.[198] For instance, rather than define what sustainable development is, Article 12(2) only describes sustainable development as one of the purposes of the CDM and it does not indicate how that purpose should be fulfilled.[199]

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[194] See also Article 10 KP.
[195] Article 2(1) (a) (i).
[196] Article 2(1) (a) (iii).
[197] Article 2(1) (a) (VI).
[198] According to Banuri and Gupta, the KP appears to have avoided the lack of definition of sustainable development for CDM projects by "placing the responsibility of project screening and approval on the host country—under the belief, presumably that it would automatically select projects that would advance the national interests and therefore sustainable development." T. Banuri and S. Gupta, 'The Clean Development Mechanism and sustainable development: an economic analysis' in P. Ghosh (ed.*), Implementation of the Kyoto Protocol: Opportunities and Pitfalls for Developing Countries* (Singapore: Asian Development Bank, 2000), 73 at pg. 78.
[199] The term 'sustainable development' can only be found three times in the text of the KP, in Articles 2, 10 and 12. See H.Kolshus *et al.*, 'Can the Clean Development Mechanism attain both cost effectiveness and sustainable

Furthermore, Article 12 is more forthcoming on the benefits of the CDM for Annex I countries than for non-Annex I countries. For instance, while Article 12(3) (a) states that "[p]arties not included in Annex I will benefit from project activities resulting in certified emission reductions", without elaborating on what those 'benefits' would be, Article 12(3) (b) explicitly states that "[p]arties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3...."

Equally important is the fact that sustainable development is not listed as one of the requirements that a proposed CDM project will be judged on before it is certified and awarded CERs. Article 12(5), which specifies the eligibility criteria for CDM projects, does not include a sustainable development criterion for eligibility of CDM projects. It however lists the cost-effective emission reduction objective of the CDM as an eligibility criterion for CDM projects. Specifically, it states that "[e]mission reductions resulting from each project activity shall be certified by operational entities… on the basis of: (a) [v]oluntary participation approved by each Party involved; (b) [r]eal, measurable, and long-term benefits related to the mitigation of climate change; and (c) [r]eductions in emissions that are additional to any that would occur in the absence of the certified project activity." This suggests that a CDM project's contribution to achieving sustainable development will not be given the same priority as the objective of cost-effective emission reductions.

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development objectives?' Centre for International Climate and Environmental Research (CICERO) Working Paper 2001:8, 9. http://www.cicero.uio.no/media/1316.pdf (CICERO Website, 17/8/2010).

Furthermore, as a result of the dual objectives of the CDM, there is a continuing debate on whether, from the language of Article 12(2), there is a priority between the CDM's dual objectives. Huq and Reid have suggested a prioritisation between the twin objectives of the CDM. According to them, the reduction of emissions is the first objective of the CDM, followed by a second objective to assist CDM host countries in achieving sustainable development.[200] However, the negotiations leading to the creation of the CDM do not support Huq and Reid's position. Analysis of the negotiations indicates that achieving sustainable development in developing countries is at par with the CDM's other objective of cost-effective emission reduction for developed countries.[201] What can be said of the negotiations leading to the creation of the CDM is that both parties (developed and developing) tried to build their interest into what emerged as the CDM: for countries with emission reduction commitments, the flexibility to explore other means to achieve their emission reduction commitments without the burden of financial penalty for non-compliance; and for developing countries, financial mechanism to assist them in achieving sustainable development.[202]

An analysis of the provisions of Article 12(2) of the Protocol does not suggest such hierarchy in their objectives. In fact the wordings of Article 12(2) seem to suggest that the sustainable development objective of the CDM takes precedence over the emission reduction objective of the CDM. According to Boyd *et al.*, "[i]ndeed the first statement in the Kyoto Protocol that defines the CDM says clearly, 'the purpose of the Clean Development Mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in

[200] S. Huq and H Reid, 'Benefit sharing under the Clean Development Mechanism' in D. Freestone and C. Streck (eds.) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* (Oxford: Oxford University Press, 2005), 230 at pg. 246. According to Huq and Reid, "…the first objective of the CDM is to reduce greenhouse gas emissions and the second objective is to assist developing countries which host CDM projects to achieve sustainable development."

[201] K. Olsen, (2007), 66.

[202] J. Werksman, 'The Clean Development Mechanism: Unwrapping the 'Kyoto surprise' (1998) 7(2) *Review of European Community and International Environmental Law* (RECIEL) 147 at 151-152.

contributing to the ultimate objective of the Convention....' an ordering which gives clear priority by the negotiators to sustainable development."[203] However, as shall be discovered later in this thesis, this precedence is not demonstrated in the practical governance and application of the objectives of the CDM.

A number of reasons could be proffered for the reluctance of the CDM's governing body towards ensuring the governance, and the effective implementation of the CDM's sustainable development objective - firstly, it could be as a result of the uncertainty surrounding sustainable development as a concept in international law and as a tool for governance.[204] Secondly, in the course of negotiating the structure of the CDM, different options for ensuring project compatibility with sustainable development goals were discussed. The main question was whether CDM host countries should establish their own standards and criteria for assessing the sustainable development contributions of proposed CDM projects, or whether international standards or rules should be formulated to guide CDM host countries.[205] In particular, CDM host countries were concerned about protecting their sovereignty right and they were unwilling to accept sustainable development priorities imposed on them by the North.[206] For example, during the negotiations that resulted in the CDM rules, developing countries rejected the guidance on sustainable development, which was contained in the draft proposal for the CDM rules because they were of the opinion that

[203]E. Boyd *et al*., 'Reforming the CDM for sustainable development: lessons learned and policy futures (2009) 12 *Environmental Science & Policy* 820 at pg. 821. Similarly, Mathy *et al*. opine that the objectives of the CDM are described in Article 12 of the KP in descending order. S. Mathy *et al.*, 'Clean Development Mechanism: leverage for development?' (2001) 1 *Climate Policy* 251 at pg. 252.

[204] Recall discussion in Section 2.2 *supra* on sustainable development as a concept in international law. Also see UNFCCC 'Benefits of the Clean Development Mechanism 2011', 9. http://cdm.unfccc.int/about/dev_ben/pg1.pdf (09/12/11).

[205] This issue is discussed further in Chapter 3, Section 3.3.

[206] C. Kelly, and N. Helme, (2000) 'Ensuring CDM project compatibility with sustainable development goals', 2000. Available at www.ccap.org (Center for Clean Air Policy website 5/9/2011). See also See Chapter 1, Section 1.4.

it will violate their sovereign right to define their development priorities.[207] For example, the draft proposal stated that "[s]ustainable development priorities must be based on the best available long-term environmental option, taking into account local and national needs and priorities. Technology transfer shall be state-of-the-art and environmentally sound; and priority should be given to renewable energy, energy efficiency."[208] This guidance was not included in the final text of the CDM rules.[209]

Despite the rationale for developing countries' position on their sovereign right to define their sustainable development, several research studies highlight the dangers in this. For instance, according to Sutter, the CDM's failure to establish international standards or indicators for assessing the sustainable development contributions of CDM projects, could lead to a 'race to the bottom' because in a bid to attract CDM investment, CDM host countries can set low sustainability assessment standards for proposed CDM projects.[210] Furthermore, because the CDM involves different stakeholders with unequal power and influence, the stronger stakeholder (usually the CDM investor) will be in a better position to influence the terms of the CDM project, to the detriment of the weaker stakeholder (usually the host country and the host country project participant keen to attract CDM investment). Also, because there are no internationally agreed set of criteria and indicators for measuring the sustainable development

[207] S. Thorne and S. Raubenheimer, 'Sustainable development (SD) appraisal of Clean Development Mechanism (CDM) projects – experiences from the SouthSouthNorth (SSN) project', 64. http://www.siame.gov.co/siame/documentos/documentacion/mdl/03_VF_Bibliografia/Baseline/appraisal%20cdm%20projects.pdf. (Ministry of Mines and Energy, Republic of Colombia Website, 17/3/ 2011).
[208] *Ibid.*
[209] *Ibid.* As a consequence of this, the preamble to Decision 17. CP.7 states that it is the host country's prerogative to confirm whether a CDM project assists it in achieving sustainable development. Also, as we shall see in the following section and in Chapters 3, 4 and 5, the position of developing countries during the negotiations has been at a disadvantage to the sustainable development objective of the CDM. The unresolved tension between the sovereign rights of nations to define their sustainable development priorities and the role of international bodies such as the EB to prescribe minimum standards for sustainable development is discussed further in Chapter 3, Section 3.3.
[210] C. Sutter, *Sustainability Check-Up for CDM Projects: How to assess the sustainability of international projects under the Kyoto Protocol*, 68.This is discussed further in Chapter 5, Section 5.5 and it is also evident from the assessment and analysis of registered projects in Chapter 5.

contributions of proposed CDM projects, the governance of the sustainable development objective of the CDM will likely vary from one host country to the other.[211]

2.4 Conclusion

Sustainable development remains a relevant policy tool in international law, as well as in the regional, national and local contexts. Although its meaning, principles and implementation remain unsettled in international law, sustainable development is indispensable in the effort to mitigate and adapt to climate change. Likewise, climate change mitigation and adaptation efforts can also contribute to the achievement of sustainable development.[212]

Sustainable development is a key principle of the CCR regime. However, sustainable development is not defined for the CCR. Although the CDM was established to assist CDM host countries in achieving sustainable development, the provisions of Article 12 and the CDM rules with regard to the sustainable development objective of the CDM are inadequate. As discussed earlier, this is an important omission given the unsettled nature of sustainable development in international law, and its various definitions which, sometimes, tend to focus on one aspect of sustainable development rather than an effective integration of the whole.

Therefore, one of the key reasons for the current failure of the CDM to deliver on its sustainable development mandate is that the CCR particularly Article 12 and the CDM rules

[211] This is evident from the assessment and analysis of registered projects in Chapter 5, *infra*. Suggestion for establishing an internationally agreed criteria and indicators for measuring the sustainable development contributions of proposed CDM projects are discussed further in Chapter 3, Section 3.3.

[212]See H. Rogner *et al.*, 'Introduction' in B. Metz *et al.,* (eds.) *Climate Change 2001: Mitigation* (Cambridge: Cambridge University Press, 2001), 98. According to the IPCC, "… properly designed climate change policies can be part and parcel of sustainable development, and the two can be mutually reinforcing… Projected climate changes can exacerbate poverty and undermine sustainable development, especially in least developed countries. Hence, global mitigation efforts can enhance sustainable development prospects in part by reducing the risk of adverse impacts of climate change."

do not define the sustainable development that the CDM is established to promote. As a result of this omission, there are no minimum standards and guidelines for governance and implementation of sustainable development. Without minimum standards and guidance, it is unlikely that the CDM will achieve its sustainable development objective. To address this inadequacy, internationally-agreed set of criteria and indicators, for measuring the sustainable development contributions impact of CDM projects, should be introduced for the CDM. These internationally-agreed set of criteria should complement nationally defined criteria and indicators for assessing proposed CDM projects where available. The advantage of this is that the existence of both standards – international and national – will mitigate possible weaknesses in the existing system of sustainability assessment by some host country DNAs, while encouraging CDM host countries to build upon the minimum standards.

In view of the current challenges of the CDM to effectively contribute to sustainable development in developing countries, this thesis considers in the following three chapters if there are shortcomings in the V & R requirements themselves or if the shortcoming is from the fulfilment, implementation and supervision of the V & R requirements that contribute to the CDM's failure in achieving its sustainable development objective.[213] The next chapter assesses these requirements to determine if they are capable of promoting sustainable development in CDM host countries.

[213] This is done in Chapter 5.

CHAPTER THREE

THE VALIDATION AND REGISTRATION REQUIREMENTS FOR CDM PROJECTS

3.1 Introduction

The purpose of this chapter is to examine the suitability of the V & R requirements in order to determine if these requirements can contribute to the sustainable development objective of the CDM. As highlighted in Chapter 1, some of the V & R requirements are generally regarded as tools for promoting sustainable development in international law, therefore, on the face of it, if they are fulfilled, implemented and supervised effectively, they should promote sustainable development in CDM host countries.

This chapter analyses the requirements as contained in the CDM rules and the further clarifications contained in the CDM Manual, as well as the practical application of these rules by CDM project participants. In analysing the V & R requirements, this chapter will use the requirements of the GS as a yardstick for measuring the ability of the current V & R requirements to promote sustainable development in CDM host countries.[214] Specifically, this chapter will analyse the CDM V & R requirements and compare them to the GS Requirements[215] and the GS Toolkit.[216] The purpose of this analysis is to determine whether features of the GS can be adopted for the CDM, because, the GS requirements have been

[214] See Chapter 1, Section 1.7 for discussion on the Gold Standard and other carbon offsets.
[215] 'The Gold Standard Requirement' Version 2.1. http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Requirements-11.pdf (Gold Standard Foundation Website, 16/1/ 2012). The GS requirement presents the fundamental principles and the rules of GS certification while the toolkit describes the project cycle and provides examples and detailed instructions on the use of the GS.
[216] 'The Gold Standard Toolkit' Version 2.1. http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Toolkit_Clean-11.pdf (Gold Standard Foundation Website, 16/1/ 2012).

found to be robust tools for assessing projects' contribution to sustainable development in CDM host countries.[217]

Although there are other voluntary carbon offset standards, the GS was selected for several reasons. Firstly, of all the other standards,[218] the GS is the only standard that places an emphasis on the sustainable development benefit of projects and has put mechanisms in place to ensure that project participants actively consider the sustainable development impact and benefits of their projects. Secondly, GS requires a strict set of criteria that is additional, robust and more comprehensive than the V & R requirements.[219] Thirdly, the GS toolkit provides standards, guidelines, detailed instructions and best practices on how project participants should fulfil the requirements, something that is currently lacking in the CDM rules. Fourthly, the GS is regarded as rigorous and as having the highest level of voluntary emission reduction certification.[220] Although the GS requirements are considered 'strict', research has shown that GS project participants generally consider the additional GS requirements to be manageable.[221] Finally, comparative analysis of registered CDM and GS projects conclude that GS CDM projects have a higher potential to contribute to local sustainable development compared to regular CDM projects.[222]

This author acknowledges that despite the advantages of the GS, it is not perfect. For instance, the GS only registers renewable energy and demand-side energy efficiency CDM

[217] W. Streck *et al*., 'Further development of the project based mechanisms in a post-2012 regime', 93.
[218] The other standards were discussed in Chapter 1, Section 1.7.
[219] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 134.
[220] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 134.
[221] W. Streck *et al*., 'Further development of the project based mechanisms in a post-2012 regime', 131.
[222] *Ibid.* See also M. Drupp, 'Does the Gold Standard label hold its promise in delivering higher sustainable development benefits? A multi-criteria comparison of CDM projects' (2011) 39(3) *Energy Policy*, 1213.

projects. This is an arbitrary definition of sustainable development because other CDM projects that could potentially contribute to sustainable development, such as transport and waste handling and disposal, are screened out of the GS. Additionally, although project participants acknowledge that the additional work and cost required to obtain GS certification are manageable, unfortunately, GS certification does not always translate into a higher price at the carbon market. This is because compliance buyers show very little interest in the GS as it makes no difference if they use conventional CDM credits or GS CDM credits towards their emission reduction commitments.[223]

A new regulatory framework is currently being implemented for the CDM, and it is important to include the new regulatory framework in the analysis of this chapter.[224] At its 59th Meeting, the EB instituted the CDM Management Plan 2011 with the objective of, among other things, achieving greater efficiency in the operation of the CDM.[225] With specific relevance for this thesis, objective 3(b) of the Management Plan states that it aims to clarify, consolidate and enhance the consistencies of all the existing regulatory decisions of the EB relating to the validation and verification of CDM projects.

Following this, and in response to the inputs of various stakeholders on the need to strengthen the governance and implementation of the CDM,[226] the EB adopted the: CDM Project Standard (version 01.0, hereinafter called CDM PS), with the objective of enhancing the

[223] W. Streck *et al*., 'Further development of the project based mechanisms in a post-2012 regime', 16.
[224] This is despite the fact that the new regulatory framework was instituted just as the corrections to this thesis were about to be submitted.
[225] See Paragraph 2 of EB-59, Annex 17.
[226] For instance, see the following: 'The Gold Standard Foundation Submission' on the 'CDM Executive Board call for public input on the inclusion of co-benefits and negative impacts in CDM documentation'. cdm.unfccc.int/public_inputs/...benefits/.../. (UNFCCC website 16/3/2012); and CDM Watch's submission 'CDM Executive Board Call for Public Inputs on Sustainability Benefits' http://cdm.unfccc.int/public_inputs/2011/sustainability_benefits/cfi/B0COJHMC6V3MPG10MDG0TEZFO2B11F (16/3/2012).

consistency and clarity of the V & R requirements, so as to facilitate and promote a clear and common understanding by all parties involved in the CDM;[227] and Validation and Verification Standard which is applicable to DOEs (version 02.0, hereinafter called CDM VVS).[228] Although the CDM rules are still in force and the CDM V & R requirements remain the same, the CDM Manual has been cancelled as of May 2012, and replaced with the CDM VVS.[229] The new standards and guidelines seek to provide further clarification to project participants, DOEs and other relevant CDM stakeholders involved in the governance and implementation of CDM projects. While the analysis in this chapter is based on the CDM rules and the CDM Manual, it is important to analyse the new regulatory framework as an addendum to the analysis made herein. Consequently, at the end of the discussion of each requirement, this chapter will analyse the new rules. The purpose of the analysis is to determine if there are improvements in the new regulatory framework for the CDM and if such improvements will promote sustainable development in the CDM.

It is also important to note that the analysis made in this chapter is influenced by both international and national issues such as state sovereignty, capacity needs of developing countries to effectively implement and supervise the CDM V & R requirements, political instability in host countries, local rules and regulations that may affect the requirements and so on. For example, the sovereignty of CDM host countries limits the extent to which the CDM can prescribe detailed procedures for the fulfilment and supervision of some of the V &

[227] EB-65, Annex 5. See Paragraph 5(a) of Annex 5.
[228] EB-65, Annex 4. It enhances the consistency and clarity of minimum requirements for all types of CDM validation and verification activities. See Paragraphs 5(a) and 6. Note also that the EB also adopted the Project Cycle Procedure (CDM PCP), applicable to the EB and the UNFCCC Secretariat. The objective of this procedure is to improve the consistency and clarity of minimum requirements for all CDM validation and verification activities. EB-66, Annex 64. Paragraph 4(a) and (b). The CDM PCP will not be analysed alongside the CDM PS and the CDM VVS because it does not provide further functions for the EB and its panels and working groups with regards to the supervision of the V & R requirements. It basically provides for the administrative functions of the EB and the UNFCCC Secretariat.
[229] See EB-66, Annex 64.

R requirements, such as the requirement for EIA. This chapter answers the first part of the main research question - to what extent are the V & R requirements suitable for promoting sustainable development.

3.2 The Validation and Registration Requirements for CDM Projects

Before a proposed project can be registered as a CDM project, the project participants must fulfil the V & R requirements in respect of that project. It is the responsibility of the DOE, being under a contractual relationship with the project participants, to review the PDD and any supporting documentation to confirm that the requirements have been fulfilled.[230]

The V & R requirements are described and analysed below, alongside relevant clarifications in the CDM Manual, to determine if the provisions stipulated in the CDM rules can promote sustainable development in CDM host countries.[231]

3.2.1 CDM Participation Requirements

To be eligible to participate, Parties must fulfil four requirements, which are: ratification of the KP; establishment of a DNA; confirmation of voluntary participation and written confirmation by the host Party DNA that the proposed CDM project assists it in achieving sustainable development.[232] The participation requirements, including the further clarifications contained in the CDM Manual, are discussed separately below. There is no

[230] See Decision 3/CMP.1, Annex, Paragraph 37.
[231] The V & R requirements are contained in Decision 3/CMP.1, Annex, Paragraphs 37(a – f) and 40 (a). These are strictly requirements for the validation of projects. They are required to be fulfilled by project participants and validated by a DOE, before a project is registered as a CDM project. Hence they are referred to in this project as validation and registration requirements.
[232] *Ibid*. Annex, Paragraphs 37(a), 28-30, and 40(a). Note that the requirements are not discussed as they are listed in the CDM rules, but according to the order in which the requirements are fulfilled during the validation and registration stages.

corresponding requirement in the GS, therefore the GS will not be considered for the first three requirements. However, the requirement for confirmation of contribution to sustainable development will be analysed alongside the GS requirement.

(a) Ratification of the Kyoto Protocol

The requirement for ratification applies to both Annex I and non-Annex I countries.[233] Currently, 192 countries have ratified the Protocol.[234] Afghanistan is the only developing country, and the United States of America (USA) the only developed country, that has not ratified the Protocol (USA has signed, but not ratified it).[235] Apart from ensuring that participating countries have ratified the KP, Curnow and Hodes advise CDM investors to ensure that the ratification process has been completed satisfactorily according to national rules and regulations by the host country, such as national rules that require that international treaties be enacted into domestic legislation in order for it to be implemented locally.[236] The new regulatory framework has not changed this requirement and as a result of that, it will not be necessary to discuss this further.

(b) Instituting a Designated National Authority

The DNA of a country acts as the principal point of contact for the CDM within and outside that country.[237] It approves participation in CDM projects and, in addition, the DNAs of non-Annex I Parties confirm that proposed CDM projects assist in achieving sustainable

[233] Decision 3/CMP.1, Annex, Paragraphs 30 and 37(a).
[234] 'Status of Ratification of the Kyoto Protocol' http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php (UNFCCC Website, 16/3/ 2012).
[235] *Ibid.*
[236] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 20.
[237] Decision 3/CMP.1, Annex, Paragraphs 29 and Paragraph 37(a). On the DNA generally, see C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries* (Washington DC, International Institute for Sustainable Development and the Centre for Sustainable Development in the Americas : 2002), 1-174; P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 1-90; S. Ganapati and L. Liu, (2009), 1-19; and D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries* (Hamburg: Hamburg Institute of International Economics (HWWI), 2007), 1-40; M. Lee (ed.), *CDM Information and Guidebook*, 40-41; and A. Michaelowa, 'CDM host country institutional building' (2003) 8(3) *Mitigation and Adaptation Strategies for Global Change* 201–220.

development. Therefore, the DNA has key functions in the CDM, including to: establish the approval procedure for CDM projects (Annex I and non-Annex I Party DNAs); confirm voluntary participation of project participants (Annex I and non-Annex I Party DNAs); confirm sustainable development contribution of projects (non-Annex I Party DNAs); and issue LoAs for the purposes of validation and registration (Annex I and non-Annex I Parties).[238] In addition to its stated functions, host country DNAs also have the option of playing discretionary roles, such as capacity building and promotional activities, and the assessment of technical aspects of proposed projects (e.g. baselines and additionality).[239] As of 1st February 2012, 160 countries, consisting of 32 Annex I and 128 non-Annex I Parties have established DNAs.[240] The new regulatory framework has not changed this requirement and as such, the analysis made below is based on the CDM rules.

The CDM rules relating to the establishment of DNAs simply provide that countries should establish DNAs. However, considering the importance of the DNA in the CDM approval process, especially with regard to the approval of projects and confirmation that proposed projects assist in achieving sustainable development, the CDM rules provide very little guidance on the role and functions of a DNA.[241] Therefore, Parties wishing to participate in the CDM are left to define and determine the role, strength, and visibility of their DNAs.[242]

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[238] See: D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 12.

[239] For instance, the DNA of Argentina requires a technical assessment in its review process in addition to its assessment of the sustainable development contribution of proposed projects.

[240] The breakdown is as follows: 32 in Annex I countries; 48 in Africa; 41 in Asia and the Pacific; 29 in Latin America and the Caribbean; and 10 in Eastern Europe. See UNFCCC website, Number of Parties/DNAs by Region. http://cdm.unfccc.int/Statistics/dna/DNAByRegionBarChart.html (UNFCCC Website, 22/4/ 2011). According to Hayashi and Michaelowa, some regions are lagging behind in instituting DNAs as a result of such factors as uneasiness with the Kyoto Process (Middle East), political instability, lack of human and financial resources, and the low awareness of the CDM. Hayashi and Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 3.

[241] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 20.

[242] According to Hayashi and Michaelowa, because the model and responsibilities of DNAs adopted by countries vary, the efficiency of the DNA structure will vary as well. D. Hayashi and A. Michaelowa, *Efficient*

The lack of guidance on the role and function of DNAs will likely impact, in varying degrees, host countries' participation in the CDM, this is because some host countries may lack the capacity and adequate institutional structure required to establish an efficient DNA structure. For example, in her comparison of host country DNAs, Lokey noted that while most host country DNAs are located within the country's ministry of environment or energy (with the associated bureaucracy that goes with ministries), some other host countries, (such as Peru, Ecuador and Argentina), have thriving DNA offices that are commercial offices, privately and independently run on revenues from completing the CDM project cycles for prospective developers.[243] While both arrangements will have their advantages and disadvantages, Lokey notes that the degree to which a DNA office is independent and active in the local community is one of the contributory factors that determine if a country achieves its CDM potential or not.[244] A well-structured DNA office, with clear powers and responsibilities, will enrich the CDM process and facilitate the implementation of CDM projects. On the other hand, if the DNA office created is not well-suited to the needs of the host country, it may lead to internal power struggles between ministries and a haphazard approval process.

Although not stipulated in the CDM rules, the DNAs established by Parties, particularly developing host country Parties, must be capable of establishing an approval procedure for proposed CDM projects, and be capable of assessing proposed projects for their sustainable development contribution.[245] However, without establishing an approval procedure and assessment criteria for sustainable development, it is more likely that the DNA will simply

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DNA operation: Lessons from different DNA settings in non-Annex-B countries, 11.

[243] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 150.

[244] *Ibid*. at 149.

[245] S. Ganapati and L. Liu, (2009), 57. Also see D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 12.

issue LoAs and confirmation of sustainable development contribution routinely. Several authors have highlighted that the DNA has substantial influence on guiding proposed CDM projects to ensure that they contribute to the country's sustainable development priorities.[246] However, many DNAs have not been able to put this influence to effective use due to, *inter alia,* a lack of defined criteria for assessing projects and inability to effectively apply these criteria to assess proposed CDM projects. Hayashi and Michaelowa, in their research on the structure of DNAs in Asia, Latin America and South-Eastern Europe, established that although most DNAs have defined sustainable development criteria for proposed CDM projects, there is little evidence that most DNAs have been able to define concrete methods to effectively assess CDM projects against their defined sustainable development criteria.[247]

Research studies have suggested ways for Parties to establish successful and efficient DNAs.[248] For instance, Olivas advocates that an initial assessment should be conducted before establishing a DNA.[249] She suggests that the assessment process should consider two broad elements; the political situation in the country that could affect the CDM and the current technical knowledge and know-how that is available in the country.[250] Once the initial

[246] See: S. Ganapati and L. Liu, (2009), 57; D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 13; P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 20; M. Castro *et al*., 'The functions of a national authority' in C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries,* 63 at pg. 65.

[247] D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 14. See section 3.2.1 (d) for further discussions on this.

[248] See the following: H. Olivas, 'Evolution of national authorities' in C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries,* 53-61*;* P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues,* 1-90; M. Lee *et al*. (ed.), *CDM Information and Guidebook* 2nd edn. (Roskilde: UNEP Risoe Centre on Energy, Climate, and Sustainable Development, 2004); D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 5-6; M. Castro *et al*., 'The functions of a national authority' in C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries,* 63-74.

[249] H. Olivas, 'Evolution of national authorities' in C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries*, 53.

[250] To assess the political environment for the CDM, she recommends that the assessment should consider such issues as: the ratification of the Protocol, political stability of the country and how it might affect long-term commitment to the CDM. To assess the technical expertise currently available in the country, she advocates that

assessment has been carried out, Olivas provides a general framework that could guide Parties in establishing a DNA. She proposes three steps for Parties wishing to establish a DNA. Firstly, host countries must clearly define the aims and objectives of the DNA office, while promoting national sustainable development goals. Secondly, host countries must provide the DNA with an official status, which may come from national legislation, a presidential or ministerial decree, or other similar legal instrument.[251] Thirdly, host countries must review and establish a national legal framework for CDM project implementation.[252]

The framework suggested is a broad framework, and the process adopted for establishing a DNA is not cast in iron, so, each country can tailor the above process to its national circumstances. The important factor is that the institution established should have the capacity to act as an effective DNA, performing the functions that will allow the country to effectively assess and approve proposed projects, while actively promoting projects that align with nationally-defined sustainable development priorities.[253]

Depending on its national circumstances, a country could adopt any of the following five structures of DNA: single government model; two-unit model; inter-ministerial model; foreign direct investment (FDI) piggyback model; and outsourcing model.[254] For the single government model, the same government department undertakes project approval and CDM promotion activities in a country. Hayashi and Michaelowa note that although this is a cost

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the country should consider such issues as the: general level of interest and understanding of the CDM, which is necessary prior to establishing the DNA as a principal point for CDM in the country; and availability of resources. Ibid 53 -54.

[251] Ibid. at 56.

[252] *Ibid*. at 55 – 61.

[253] *Ibid.* at 61.

[254] D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 5. Also see: P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 21-23; S. Ganapati and L. Liu, (2009), 50; M. Lee (ed.), *CDM Information and Guidebook*, 40-41; and A. Michaelowa, (2003), 210-220.

saving measure, it could lead to conflicts of interest where the DNA is in charge of approving projects and, at the same time, attracting investors through CDM promotional activities.[255] The two-unit model involves the creation of two distinct arms within the DNA, one responsible for regulations and the other responsible for CDM promotional activities. Unlike the single government model, the two unit model will be independent and will rarely encounter conflict of interest situations in the performance of their responsibilities.[256] The inter-ministerial model consists of representatives from all relevant government departments, under the coordination of the Ministry of Environment. This model has the added advantage of expertise and varied experience among its members because its members, drawn from different government departments, are involved in the approval process. However, just as in the single government model, this arrangement can lead to conflicts of interest and power struggles among the different departments.[257] The FDI model involves adopting the FDI's institutional framework to establish a DNA office.[258] Finally, the outsourcing model involves outsourcing the administration and functions of the DNA to an independent agency. The agency will be responsible for approving proposed projects and communicating its approval decisions to the relevant government agency. This model requires stringent supervision by the government agency in order to ensure that projects that support the sustainable development objectives, in the case of host country, and quality projects generally, are being approved by the independent agency.[259]

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[255] Ibid. D. Hayashi and A. Michaelowa, Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries, 5. Also see: E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 89.
[256] D. Hayashi and A. Michaelowa, *Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries*, 5.
[257] *Ibid*. at 6.
[258] *Ibid*.
[259] *Ibid*.

Michaelowa recommends a single unit, such as the single government model discussed above as the ideal DNA structure for Parties.[260] In the alternative, he recommends a two-tiered organisation such as the two-unit model discussed above as a second-best option.[261] Curnow and Hodes advocate the two-unit model and cited Peru's DNA structure as an example. Peru's DNA is structured after this model, Peru established two distinct DNA agencies for CDM activities; the Ministry for Environment (MINAM) acts as the DNA agency regulating CDM project activities, while the National Fund for the Environment (FONAM) is the DNA agency responsible for promoting CDM project development in Peru.[262]

To avoid the conflict of interest situations that can arise from some of the models above, it is recommended that Parties should establish the two-unit model DNA agencies. This model is ideal because the CDM has a regulatory and a commercial aspect and it will likely be ineffective for a single agency to be in charge of these two distinct aspects. The separation of functions traditionally performed by one agency, into two distinct agencies, with distinct roles, will enhance the regulatory capacities of the agencies, while avoiding possible conflicts of interest situations that could arise where a single agency is responsible for regulating and promoting CDM activities in the CDM host country. Apart from their regulatory responsibilities, provided in the CDM rules, DNAs should be commercially inclined in order to attract CDM investment that will also contribute to national sustainable development goals and priorities. These goals and priorities may be set out in a variety of places, including the host country's constitution, relevant strategies, plans, guidance and policy for sustainable development.

[260] A. Michaelowa, (2003), 218.
[261] *Ibid.*
[262] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 23.

Ultimately, a CDM structure that is well-suited to national circumstances will enhance the ability of the DNA to ensure that CDM projects contribute to the country's sustainable development goals. The new regulatory framework has not changed this requirement, and as a result, it will not be necessary to discuss this further.

c) Voluntary Participation of Parties

Paragraph 28 of the CDM rules states that "[p]articipation in a CDM project activity is voluntary". Therefore, the rule makes it clear that there is no obligation on Parties, both developed and developing countries and their entities, to participate in the CDM. However, while paragraph 28 is silent on who should make the confirmation of voluntary participation and how, paragraph 40(a) of the CDM rules clarifies paragraph 28. It affirms that the DOE must have received written confirmation of voluntary participation in the LoA from the DNA of each Party involved in the CDM project.[263] In validating voluntary participation, the CDM Manual provides that the DOE shall determine that the requirement in the CDM rules with regards to participation has been fulfilled.[264] However, as a further clarification, the CDM Manual provides that if the DOE is in doubt about the authenticity of the LoA, the DOE shall verify with the issuing DNA that the LoA is authentic.[265]

It is unlikely that there will be circumstances where a developing country will be participating involuntarily in the CDM. This is because the CDM rules provide safeguards against undue influence in instances where an Annex I country or an international organisation is directly involved in a CDM project. For instance, the CDM rules requires all PDDs to provide confirmation that the funding for the CDM project does not result in

[263] Decision 3/CMP.1, Annex, Paragraphs 28 and 40(a). Also see Article 12(5) (a) of the KP.
[264] EB 55 Annex 1, Paragraph 45-46.
[265] *Ibid.* Paragraph 48.

diversion of official development assistance (ODA). As a result, the ability of developing countries to obtain ODAs is not connected to their participation in the CDM.[266] Furthermore, State entities are not the only entities involved in CDM projects, private entities from Annex I and non-Annex I Parties also participate in the CDM, and it is unlikely that they can compel a developing country to participate involuntarily in a proposed CDM project. The new regulatory framework has not changed this requirement and as a result of that, it will not be necessary to discuss this further.

(d) Confirmation from Host Party DNA that a Project Assists it in Achieving Sustainable Development

Paragraph 40(a) of the CDM rules requires the host country DNA to confirm in the LoA that the project assists it in achieving sustainable development. In addition, the CDM Manual provides that the DOE shall ascertain that the LoA by the DNA of the host Party confirms that the proposed CDM project will contribute to the sustainable development of the host Party.[267]

The provision that CDM projects should contribute to the sustainable development objectives of CDM host countries is an important provision because it goes to the root of the objective of the CDM. Furthermore, this function of the DNA is regarded as one of its key functions, because, in this regard, the DNA is responsible for ensuring that projects implemented within its country will actually contribute to the country's sustainable development.[268] Therefore, it is envisaged that in confirming that the proposed CDM project assists it to achieve

[266] Decision 3/CMP.1, Appendix B, Paragraph f.
[267] EB 55 Annex 1, Paragraph 126.
[268] S. Ganapati and L. Liu, 'Sustainable development in the Clean Development Mechanism: the role of Designated National Authority in China and India' (2009) 52(1) *Journal of Environmental Planning and Management*, 43 at pg. 45. See also: P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2009), 20; Asian Development Bank (ADB), 'The roles and functions of the Designated National Authority on the Clean Development Mechanism' http://www.adb.org/Documents/Guidelines/Clean-Development-Mechanism/dna-kor.pdf , 5. (ADB Website, 30/3/2011).

sustainable development, the DNA of the CDM host country would only approve projects that actually contributes to its sustainable development.[269]

However, the provision in the CDM rules relating to this function is vague. The rules only require confirmation from the DNA that the proposed CDM project will assist it in achieving sustainable development. The CDM rules do not provide guidance on how DNAs should assess the sustainable development contribution of proposed CDM projects. It simply provides that the DNA should confirm that a project assists it in achieving sustainable development and nothing else. The CDM Manual simply repeats the provisions in the CDM rules.[270]

As a result, the procedure for sustainability assessment and approval of CDM projects will vary significantly between countries and different host countries will have different approval procedures for assessing and confirming the sustainable development contributions of CDM projects.[271] For example, Table 3.1 below provides a snapshot of the sustainable development criteria for proposed projects in India, China, Brazil, Mexico, South Africa, Morocco and Armenia. The seven host countries adopt the checklist approach for assessing the sustainable development contributions of proposed CDM projects. However, an overview of the table

[269] F. Yamin and J. Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* (Cambridge: Cambridge University Press, 2004), 171. See also: C. Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts between Climate Measures and WTO Law* (Leiden: Martinus Nijhoff Publishers, 2008), 344; C. Streck and J. Lin, 'Making markets work: a review of CDM performance and the need for reform' (2008) 19(2) *EJIL* 409 at pg. 419.

[270] The CDM Manual provides that "CDM project activities shall assist Parties not included in Annex I to the Convention in achieving sustainable development. EB 55, Annex 1, Paragraph 125.

[271] Lokey notes that the procedure for approval in some host countries is up to a 15-step procedure to obtain LoA. E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 90. See also Curnow and Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 24; and K. Olsen and J. Fenhann, 'Sustainable development benefits of Clean Development Mechanism projects: a new methodology for sustainability assessments based on text analysis of the project design documents submitted for validation' (2008) 36 *Energy Policy* 2819 at pg. 2820.

indicates that 'criteria' differ from one country to the other.[272] For example, the sustainable development criteria for CDM projects in India, South Africa and Morocco are defined along the traditional sustainable development dimensions of social, economic, environmental and technological development. For Brazil and Mexico, CDM projects must conform to existing sustainable development policies. In addition, Brazil and Mexico also require that CERs achieved from CDM projects should be monitored annually via the submission of a validation report to the DNA. On the other hand, China defines its priority area for sustainable development as energy efficiency and methane recovery and utilisation projects. To further this goal, it uses a discriminatory taxation system to attract projects that promote its sustainable development criteria. China levies lower taxes on CERs earned from projects that fall within its sustainable development priority areas and it levies higher taxes on projects that fall outside its priority areas.[273] Also, China protects its right to emit GHGs by stipulating that companies investing in CDM projects must have at least 51% Chinese ownership. See Table 3.1 below for a snapshot of the sustainable development criteria for proposed projects in India, China, Brazil, Mexico, South Africa, Morocco and Armenia.

[272] K. Olsen and J. Fenhann, (2008), 2820.
[273] Refer to Chapter 5 for further discussion.

Table 3.1: Sustainable Development Criteria and Processes for Approval of CDM Projects[1]

	India	China	Brazil	Mexico	South Africa	Morocco	Armenia
SD criteria	Checklist for: 1. Social 2. Economic 3.Environmental and 4.Technological well-being	Priority area for sustainable development: 1.Energy efficiency 2.Methane recovery and utilisation Discriminatory tax based approach: 2% tax on CERs from priority areas, 30% for N_2O and 65% for HFCs and PFCs	Checklist for: congruence with existing SD policies	Checklist for: congruence with existing SD policies	Checklist for: 1.Economic 2.Social and 3.Environmental Development	Checklist for: 1.Social 2.Economic 3.Environmental and 4.Technological Development	Checklist for: 1.Environmental 2.Economic and 3.Social criteria
Other eligibility criteria	None	1.At least 51% Chinese ownership of enterprises 2.CER sales belong to the Chinese government and project developers and 3.Revenue sharing by other entities forbidden	1.Submission of Validation report in Portuguese before LoA is given 2.Documentation for stakeholder consultation Commitment to report on the CERs produced	1.Documentation of the legal and physical existence of the requesting Party 2.Commitment to report on the CERs produced annually	None	1.Conform with Morocco's laws and policies, particularly an EIA	None

[1]K. Olsen and J. Fenhann, (2008), 2821.

Documentation required for LoA Approval process for LoA	1. PDD and presentation. 1.DNA is a single Window clearance for LoA 2.LoA issued within 60 days	1.PIN: LoE 2.PDD: LoA PDD: LoA 1.DNA issues LoE 2.DNA and National CDM Board issues LoA 3.LoA issued within 60 days	1.PDD: LoA 1.DNA is a single Window clearance for LoA 2. LoA issued within 60 days	1.PIN: LoE 2.PDD: LoA 1. DNA and ministries and audit committee issues LoA 2. LoA issued within 30 days.	1.PIN: LoE 2.PDD: LoA 1.DNA issues LoE within 30 days 2. DNA and public consultation for 30 days and advisory committee before LoA is issued 3. Loa issued within 30 days	1.PIN: LoE 2. PDD: LoA 1. DNA is a single window clearance for LoA 2. LoA issued within 4 weeks	1.PIN: LoE 2.PDD: LoA 1.DNA and stakeholder Consultations 2.LoA issued within 30 days

K. Olsen and J. Fenhann, (2008), 2821.
Legend for Table 4.1 above:
LoE: Letter of endorsement
LoA: Letter of approval
PIN: Project idea note
EE: Energy efficiency

The disadvantage of such varying approval procedures and sustainability assessment is that it most likely will impact on the quality of projects approved in host countries.[275] Host countries with standard approval procedures that are directly concerned with promoting sustainable development, (for example, China's definition of its priority areas for sustainable development), are more likely to approve quality projects for registration and implementation as a CDM project, while countries with no discernible procedures will likely approve any project, regardless of its quality or contribution to their sustainable development.

The absence of minimum standards and guidance could lead to a 'race to the bottom'. This is because host countries are likely to want to attract as many projects as they can, in order to benefit from the foreign investment that result from CDM projects, while placing low importance on the sustainable development impact of projects.[276] Detailed procedures and stricter assessment are perceived by host countries to be a disincentive to investors, because they may add red tape, delay, and cost to the approval process. However, as discussed in Chapter 5, this is an erroneous view because investors are not discouraged by rules and regulations, on the contrary, rules and regulations encourage investment confidence.[277]

Furthermore, the assessment of registered projects in Chapter 5 indicates that CDM host countries usually adopt vague, qualitative assessments, without concrete indicators, for defining their sustainable development criteria for CDM projects. Another consequence of the lack of detailed guidance to DNAs is that host countries interpret the confirmation of sustainable development to mean that a project complies with national rules and

[275] See Chapter 5, Section 5.3.1 for further discussion and comparative analysis of the approval procedure of China, India and Brazil.
[276] This is discussed further in Chapter 5, Section 5.5.
[277] S. Huq and H Reid, 'Benefit sharing under the Clean Development Mechanism' in D. Freestone and C Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* (Oxford: Oxford University Press, 2005), 230 at pg. 246.

regulations.[278] This is undesirable because compliance with national rules and regulations, although a good thing, is not the same as assessing projects to ensure that they contribute to sustainable development and that they do not result in negative impacts. For example, according to Eguren *et al.*, while some host countries[279] require that proposed CDM projects comply with national rules and regulations only, such as EIA and stakeholders participation, other countries[280] assess projects based on additional sustainable development criteria related to environmental (clean energy), social (stakeholders participation), and economic (improved local economy in CDM host country) attributes.[281] In addition, in the absence of guidelines or specific criteria in a host country, there is the possibility that the DNA might be influenced to approve projects for financial and other gains accruing to the DNA office or its employees.[282]

The requirement for confirmation of sustainable development contribution is therefore not sufficient to promote sustainable development in the CDM, as this requirement is vague and lacks defined parameters for its fulfilment. It is essential that the DNA fulfils this function, of confirming sustainable development contribution, in a manner that will ensure that the CDM achieves its sustainable development objective. This can be achieved, for example, by ensuring that all countries a have minimum standard or procedure for assessing the sustainable development contributions of proposed CDM projects and approving projects. Furthermore, DNAs of individual countries should ensure that proposed projects are in line

[278] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 89. See also S. Headon, 'Whose sustainable development? sustainable development under the Kyoto Protocol, the "coldplay effect," and the CDM Gold Standard' (2009) 20 *Colorado Journal of International Environmental Law and Policy* 127 at pg. 127.
[279] Such as Chile, Peru, Argentina, Ecuador, Honduras, Panama, and Republic of Korea.
[280] Such as Cambodia, Indonesia, the Philippines, Thailand, and Vietnam
[281] L. Eguren *et al*, 'Analysis of the present situation and future prospects of the Clean Development Mechanism (CDM) in the FEALAC member countries', Study of FEALAC for the 4th Economy and Society Working Group (June 7-8, 2006), 32. http://www.mofa.go.jp/region/latin/fealac/analysis0603.pdf (Ministry of Foreign Affairs of Japan Website, 17/3/2011) See also: C. Streck and J. Lin, (2008), 419.
[282] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 89.

with their sustainable development needs and priorities, so as to promote sustainable development in such countries.[283]

Also, considering the findings of literature with regard to the lapses of DOEs when validating CDM projects,[284] it is important to ensure that only quality projects get to the approval stage.[285] This can be achieved by, for example, appraising projects against standard approval process and sustainable development criteria. Furthermore, CDM host countries can improve the quality of projects that get to the validation stage by refusing to issue LoAs to undesirable projects, building investor confidence in their CDM approval procedures, lowering transaction cost for investors and project participants by providing predictable processes and costs, monitoring the implementation and progress of key sustainable development indicators, and reviewing their sustainable development priorities as required.[286]

This lack of guidance on the sustainability assessment and approval processes for proposed CDM projects is a key failing of both the CDM rules and the CDM Manual, in terms of the CDM's achievement of its sustainable development objective. While acknowledging that it will be impracticable for the CDM to prescribe detailed procedures to host countries for assessing and approving proposed CDM projects;[287] this thesis advocates that a framework procedure will be appropriate, such as the framework adopted by the GS to assess the sustainable development contributions of proposed GS projects. Host countries can build

[283] S. Ganapati and L. Liu, (2009), 57. According to Ganapati and Liu, "DNAs should use their authority to approve projects to ensure that the sustainable development goals are met."
[284] See Chapter 4, section 4.2.5 *infra* for further discussion.
[285] L. Schneider, *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, (Berlin: Öko-Institut, 2007), 24.
[286] See S. Thorne and S. Raubenheimer, 'Sustainable development (SD) appraisal of Clean Development Mechanism (CDM) projects – experiences from the SouthSouthNorth (SSN) project' http://www.siame.gov.co/siame/documentos/documentacion/mdl/03_VF_Bibliografia/Baseline/appraisal%20cdm%20projects.pdf, 65. (Ministry of Mines and Energy, Republic of Colombia Website, 17/3/ 2011).
[287] This is as a result of issues of sovereignty and differences in national rules and regulations.

their assessment and approval procedures upon the framework provided by the CDM rules to ensure that only projects that contribute to their sustainable development goals or objectives receive the approval of the CDM host country. Currently, despite the opportunity that the CDM gives host countries to use CDM investment to drive their sustainable development priorities, CDM host countries have so far put relatively low importance on defining sustainable development criteria for CDM projects hosted by them.[288] This may be due to the fact that stakeholders interested in sustainable development in developing countries often have little political influence, rarely influence policy decisions and are rarely involved in government decision-making. It may also be due to the fact that developing countries are more interested in the investment opportunities that CDM projects present, or they assume that CDM projects, regardless of the sector and its development priorities, will promote sustainable development and that it was not necessary to establish adequate governing tools to ensure that this happens.[289] Specific recommendations for strengthening the fulfilment and implementation of this requirement are discussed further in Section 3.3 *infra.*

Also, as noted above, the host country is required to confirm the sustainable development contributions of proposed projects in the LoA. There is, however, also limited guidance on the content of such LoA. This is an important point because, ideally, the LoA should set out how the project contributes to the host country's sustainable development and the criteria that were used to arrive at that conclusion. Another challenge relating to the issuance of LoAs is that the CDM rules do not stipulate whether a Party can revoke or cancel a LoA once it has been issued. Furthermore, the EB is currently silent on whether a DNA can revoke the LoA once it has been issued. This may lead to cases where projects can still generate CERs despite

[288] M. Drupp, (2011), 1214. Also see N. Hultman *et al.*, 'How can the Clean Development Mechanism better contribute to sustainable development?' (2009) 38(2) *AMBIO: A Journal of the Human Environment*, 120.
[289] This issue is discussed further in Chapter 5, Section 5.5.

the fact that they are not in compliance with national or international laws. For instance, at the 61st meeting of the EB (30th May – 3rd June), the DNA of Colombia sought clarification from the EB on its right to revoke the approval of a registered project that is no longer in compliance with national laws (a landfill project violating national environmental laws).[290] The lack of clarification calls into question the status of such a project in the host country where it will be implemented (assuming it is not already in operation), and it raises other issues such as: will the revocation of the LoA cause the project to grind to a halt?: and can the project continue to earn CERs despite the fact that it is now in breach of the CDM participation requirement (since the LoA has been revoked)? However, despite this silence, the DNAs of South Africa and Brazil state that LoAs can be revoked, after they have been issued, for non-compliance with national laws and regulations. Specifically, the Brazilian DNA states that a LoA can be revoked if evidence of illegality or acts contrary to the public interest comes to light after its issuance.[291]

Gold Standard Procedure

Under the GS, project participants are required to not only confirm, but to demonstrate that their project will have clear and verifiable sustainable development benefits.[292] The requirement for sustainable development under the GS is assessed through an integrated approach that involves four compulsory steps. Firstly, projects are required to conduct a 'Do No Harm' assessment. Secondly, the stakeholder consultation is conducted. Thirdly, the sustainable development matrix is conducted during one of the several rounds of stakeholder consultations. Lastly, the sustainability monitoring plan is prepared and submitted with the

[290] CDM Watch's submission 'CDM Executive Board Call for Public Inputs on Sustainability Benefits', 8.
[291] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 27.
[292] Gold Standard Requirement, Rule VII.

other project documentation.[293] Steps 1, 2 and 4 are discussed extensively under their corresponding CDM requirement below. To fulfil the third step, project participants are required to demonstrate that the project will have clear sustainable development benefits through a detailed impact assessment, using a sustainable development matrix.[294] GS projects are assessed against a series of twelve sustainable development indicators, using the environment, social, economic and technological development criteria.[295] To ensure standard and uniformity, the list of indicators and the means of scoring the indicators are provided by the GS rules.[296] Furthermore, the GS requires that the scoring of the sustainable development indicators must be easily reproducible and supported by convincing argument, such as publicly available information sources or expert opinions.[297] One of the key features of fulfilling this requirement is that project participants do not carry out this exercise in isolation. The assessment is usually done with the input of local stakeholders during one of the stakeholder consultation processes. This ensures that all relevant indicators and parameters are assessed. It also ensures that project participants actively consider the sustainable development impacts of their project. A project that fails to satisfy the GS requirements on clear sustainable development contribution is rejected for registration.[298]

The CDM rules on the requirement to confirm sustainable development contributions of CDM projects lack some of the important requirements and safeguards present in the GS. The GS's sustainability assessment process is insightful because there are mechanisms established to ensure effective fulfilment by project participants. Quite unlike the CDM's checklist

[293] The requirement for EIA is optional under the GS.
[294] Gold Standard Requirement, Rule VII.a.2.
[295] See Section 3.3 infra where the GS's sustainable development matrix is discussed extensively.
[296] Gold Standard Requirement, Rule VII.c.2. Also see Annex I to the Toolkit. The result of this assessment is referred to as the 'Sustainable development Matrix'.
[297] *Ibid*. Rule VII.c.4.
[298] Ibid. Rule VII.a.5, the rule states that [t]he Gold Standard Foundation reserves the right and shall reject projects that fail to satisfy Gold Standard requirement on sustainability.

procedure, the GS provides minimum standards for fulfilling the requirement that projects contribute to sustainable development in the host country. The effective fulfilment of this requirement, through a detailed sustainability impact assessment, will promote sustainable development in developing countries, and it will ensure that projects do not result in negative impacts. Furthermore, the requirement to conduct the assessment in collaboration with stakeholders ensures that stakeholders are involved in shaping the design of the project, and it promotes transparency and equity in the registration process. In addition, it ensures that mitigating measures are built into the monitoring plan for the project, and where mitigating measures will not address the negative impact, the project is not allowed to proceed under the GS.

Addendum

The CDM PS requires project participants to "…explain the contribution of the project to sustainable development."[299] Although this provision in the CDM PS is an improvement on the provisions in the CDM rules, it is not as detailed and specific as the GS requirement. In practice, under the CDM rules, although project participants are not required to explain how their project contributes to sustainable development in the PDD, project participants usually include an explanation of how the project contributes to sustainable development in the PDD.[300] Therefore, the additional requirement in the CDM PS only validates what obtains in practice in the CDM. In addition, the CDM PS does not require a detailed sustainability assessment of the project. This is an unfortunate omission because the sustainability assessment highlights not just the positive, but also the negative impacts of projects. As a result of this, the sustainable development claims made by project participants are not

[299] CDM PS, Paragraph 31(g).
[300] This is usually done in Section A of the PDD.

verified. The CDM VVS is equally vague on how the DOE should validate this requirement. To validate this requirement, the DOE is required to confirm, from an assessment of the LoA, that the DNA has '*considered'* whether the project assists the host country in achieving sustainable development.[301] However, in reporting its findings, the DOE is required to *confirm* that the host country DNA has established that the project assists it in achieving sustainable development. The word 'considered' makes an objective assessment by the DOE impossible, this is because the word 'considered' is subjective and it is up to the DOE to determine how it will conclude that the host country DNA has 'considered' whether the project will contribute to sustainable development. This author can only speculate that the DOE will validate this requirement through an independent confirmation from the DNA of the host country. This is because Paragraph 42 of the VVS states that if the DOE doubts the authenticity of the LoA, the DOE shall verify with the DNA that it is authentic. [302] Furthermore, the DOE is required to determine that the confirmation of sustainable development contribution, made by the host country DNA, is unconditional.[303]

In addition to specifying how projects contribute to the sustainable development of the host country, Paragraph 31(e) of the CDM PS includes a new requirement to describe how the proposed CDM project will transfer EST technology to the host country. One of the ways in which developing countries can attain sustainable development is through the transfer of EST. Therefore, the requirement for EST is an improvement on the CDM rules. However, it remains to be seen how this requirement will promote sustainable development since it does not mandate projects to transfer technology but only requires a description of the technology

[301] CDM VVS, Paragraph 50 and 51.
[302] *Ibid*. Paragraph 42
[303] *Ibid*. Paragraph 40.

transferred. Host countries can influence the extent to which CDM projects transfer EST.[304] CDM host countries can, for example, include transfer of technology in their approval criteria for CDM projects.[305] However, the success in the fulfilment and implementation of this requirement is further influenced by issues that are beyond the control of the CDM, such as protection of intellectual property rights, trade restrictions, excessive tariffs and other barriers to imports.

Although the CDM PS is a marked improvement on the CDM rules, it still falls short of what is obtained under the GS. This is because it does not address some important issues that should be addressed. For instance, the CDM PS does not require that projects should be assessed against internationally accepted sustainable development criteria. Furthermore, the problem of limited guidance on the content of LoAs and its status, once revoked by the host country, still persist.

3.2.2 Stakeholder Participation

Public participation is the umbrella term for citizen, stakeholder and community participation, and stakeholder participation is a subset of public participation.[306] Participation in environmental decision-making is recognised as one of the key ways to achieving sustainable development. For instance, Principle 1 of the Rio Declaration recognises that

[304] S. Seres and E. Haites, 'Analysis of technology transfer in CDM projects', 9. Report Prepared for the UNFCCC Registration and Issuance Team, Available at http://cdm.unfccc.int/Reference/Reports/TTreport/TTrep08.pdf (UNFCCC website, 15/5/2012.

[305] *Ibid*.

[306] On public participation generally, see: F. Coenen (ed.), *Public Participation and Better Environmental Decisions: The Promise and Limits of Participatory Processes for the Quality of Environmentally Related Decision-making*, (Dordrecht: Springer, 2009), D. Shelton *et al*., 'Information, public participation, and access to justice in environmental matters' in L. Kurukulasuriya and N. Robinson (eds.), *Training Manual on International Environmental Law* (Hertfordshire: UNEP/Earth Print, 2006); and T. Dietz and P. Stern (eds.), *Public Participation in Environmental Assessment and Decision Making: Panel on Public Participation in Environmental Assessment and Decision Making* (Washington DC: National Academic Press, 2008).

human beings are at the centre of concerns for sustainable development, and its Principle 10 sets out the main ideas behind public participation. It provides that

> Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities… States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.[307]

Principle 10 sets out the three elements for public participation, which are, access to information, public participation in decision-making, and access to justice in environmental matters. Following on from the Rio Declaration, several other international treaties and declarations also recognise public participation as one of the fundamental tools for achieving sustainable development. For instance, the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) is based on Principle 10, and it grants rights to the public, and imposes obligations on States, regarding access to information, public participation and access to justice.[308] The three elements of public participation identified in Principle 10 of the Rio Declaration are restated in Article 1 of the Aarhus Convention.[309] Also, Paragraph 16 of the Malmö Declaration of United Nations Environment Programme (UNEP) states that "the role

[307] See also the Preamble to Chapter 23 of Agenda 21 which states that "[o]ne of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision-making.

[308] Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus) 25 June 1998, in force 30 October 2001. *Reprinted* in (1998) 38 ILM 517. Aarhus Convention is a multilateral agreement under the United Nations Economic Commission for Europe (UN/ECE).

[309] Article 1 provides that [i]n order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being, each Party shall guarantee the rights of access to information, public participation in decision-making, and access to justice in environmental matters in accordance with the provisions of this Convention."

of civil society at all levels should be strengthened through freedom of access to environmental information to all, broad participation in environmental decision-making, as well as access to justice on environmental issues…"[310]

These international treaties, declarations and multilateral agreements have jointly established that meaningful participation is important for achieving sustainable development.[311] Participation ensures that members of the public that might be affected by policy decisions or proposed projects have an opportunity to be informed of them.[312] Some of objectives of public participation are that it promotes better decision-making, by making the participation process accessible to all, and it acknowledges and incorporates the diverse viewpoints of participants during consultation.[313]

The stakeholder process, being a form of public participation, is therefore an important tool for achieving sustainable development.[314] Hemmati defines stakeholders as "… those who

[310] The Malmo Declaration was adopted by the Global Ministerial Environment Forum, at the sixth Special Session of the Governing Council of UNEP at their Fifth plenary meeting 31 May 2000, in Malmö, Sweden. http://www.unep.org/malmo/malmo_ministerial.htm (UNEP Website, 30/5/2011).

[311] N. Eddy, 'Public participation in CDM and JI projects' in D. Freestone and C. Streck (eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work* (Oxford: Oxford University Press, 2005), 71, K. Bachus, 'Governance for sustainable development and civil society participation' in L. Hens and B. Nath (eds.) *The World Summit on Sustainable Development: The Johannesburg Conference* (Dordrecht: Springer, 2005), 319 at 319.

[312] D. Shelton *et al.*, 'Information, Public Participation, and Access to Justice in Environmental Matters' in L. Kurukulasuriya and N. Robinson (eds), *Training Manual on International Environmental Law*, 79.

[313] See the following: C. Bruch and M. Filbey, 'Emerging global norms of public involvement' in C. Bruch (ed.), *The New "Public": The Globalization of Public Participation* (Washington DC: Environmental Law Institute: 2002), 3; F. Coenen (ed.), *Public Participation and Better Environmental Decisions: The Promise and Limits of Participatory Processes for the Quality of Environmentally Related Decision-making*, 2, D. Shelton et al., 'Information, public participation, and access to justice in environmental matters' in L. Kurukulasuriya and N. Robinson (eds.), Training Manual on International Environmental Law, 79; J. Meadowcroft, 'Participation and sustainable development: modes of citizen, community and organisational involvement' in W. M Lafferty (ed.), *Governance for Sustainable Development: The Challenge of Adapting Form to Function* (Cheltenham: Edward Elgar Publishing Limited, 2004), 162; and M. Sachiko and Z. Durwood, 'Rule of Law, Good Governance, and Sustainable Development' Paper presented at the Seventh International Conference on Environmental Compliance and Enforcement, April 2005, http://www.inece.org/conference/7/vol1/05_Sachiko_Zaelke.pdf at 1. (INECE Website, 7/1/2010).

[314] According to Dalal-Clayton and Bass the stakeholder process can identify: interest of stakeholders in relation to problems; conflicts of interest; positive relations between stakeholders; identify negative relations between

have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it."[315] While national performance and standards may vary in the implementation of the three elements of participation, certain general characteristics are necessary for meaningful participation to occur and should therefore be evident in all stakeholder participation procedures.[316] These are access to information by the public, provision of information in a culturally-appropriate manner, the opportunity for the public to provide informed, timely and meaningful input, and access to a review process to seek redress and remedy for any harm suffered.[317]

The UNFCCC and its KP both contain provisions relating to public participation in general and stakeholder participation in particular. The UNFCCC provides that in carrying out their commitments under the Convention, Parties shall promote public access to information on climate change and its effects and public participation in addressing climate change and its effects.[318] The Protocol also requires Parties to facilitate at the national level public awareness of, and public access to, information on climate change.[319] Stakeholders are

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stakeholders; and appropriate participation for the different stakeholders. B. Dalal-Clayton and S. Bass, *Sustainable Development Strategies: A Resource Book*, 120. See also A. Oels, *Evaluating Stakeholder Participation in the Transition to Sustainable Development: Methodology, Case studies, Policy Implications* (Muster: LIT Verlag, 2003); A. Freidman and S. Miles, *Stakeholders; Theory and Practice* (Oxford: Oxford University Press, 2006); and M. Hemmati, *Multi-Stakeholder Processes for Governance and Sustainability: Beyond Deadlock and Conflict* (London: Earthscan, 2002).

[315] M. Hemmati, *Multi-Stakeholder Processes for Governance and Sustainability: Beyond Deadlock and Conflict, 2*. Also, Dalal-Clayton and Bass define stakeholders as "those people, groups or institutions who have specific rights and interest in an issue or system, and related powers, knowledge and skills". B. Dalal-Clayton and S. Bass, *Sustainable Development Strategies: A Resource Book*, 120. Also see: D. Shelton *et al*, 'Information, public participation, and access to justice in environmental matters' in L. Kurukulasuriya and N. Robinson (eds), *Training Manual on International Environmental Law*, 79.

[316] E. Petkova *et al.*, *Closing the Gap: Information, Participation and Justice in Decision-Making for the Environment* (Washington DC: World Resources Institute, 2002), 3.

[317] *Ibid.*, 15. See also N. Eddy, 'Public Participation in CDM and JI Projects' in D. Freestone and C. Streck (eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work* (Oxford: Oxford University Press, 2005).

[318] Article 6 of the UNFCCC. Also see Article 4(1) (i) of the UNFCCC.

[319] Article 10(e) KP.

defined for the purpose of the CDM as the public, including individuals, groups or communities affected, or likely to be affected, by proposed CDM projects.[320]

The CDM rules require project participants to provide a brief description of the stakeholder process adopted, a summary of the comments received from stakeholders and a report to the DOE of how they have taken due account of the comments received from stakeholders.[321] The rules also require the DOE to review the PDD and confirm that project participants have invited comments from local stakeholders.[322] In addition to the provisions in the CDM rules, the CDM Manual states that project participants shall invite stakeholders to comment on the proposed CDM project before the PDD is published on the UNFCCC website.[323] The CDM Manual further provides that as a means of validation, the DOE shall, by means of document review and interview with local stakeholders, determine: whether comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity have been invited; that the summary of the comments received as provided in the PDD is complete; and that project participants have taken due account of any comments received and have described this process in the PDD.[324]

The nature of CDM projects dictates that all stakeholders that are likely to be affected by proposed CDM projects should have access to relevant information, the opportunity to participate in the decision-making process, and recourse to judicial remedies, such as a

[320] Decision 3/CMP.1, Annex, Paragraph 1(e).
[321] Decision 3/CMP.1, Annex, Paragraph 37(b). However, Eddy and Wiser note that neither the UNFCCC nor the KP has created what can be termed as 'rights' to public participation in the CDM validation and registration process. N. Eddy and G. Wiser, 'Public participation in the Clean Development Mechanism of the Kyoto Protocol' in C. Bruch (ed), The New "Public": The Globalization of Public Participation, (Washington DC: Environmental Law Institute: 2002), 203 at pg. 203.
[322] Decision 3/CMP.1, Paragraph 2(g) of Appendix B.
[323] EB 55 Annex Paragraph 128.
[324] Ibid. Paragraph 129.

grievance mechanism that is open to local stakeholders, to address unresolved issues that arise from the stakeholder participation process, the environmental analysis and the sustainability assessment, and for issues that arise post-registration.[325] However, an analysis of the CDM rules and the CDM Manual indicates that there are considerable missed opportunities to ensure that stakeholders have access to justice in environmental matters.[326]

Generally, the CDM rules do not provide guidelines or prescribe minimum standards to project participants and host countries for conducting stakeholder participation, except to the extent specified above. It therefore lacks the requirement for meaningful participation as set out in Principle 10 of the Rio Declaration and the Aarhus Convention. For instance, the CDM rules on stakeholder participation do not set out the process by which the stakeholders of a particular project should be identified; this is left to the project participant or the host country DNA to decide. The CDM rules do not require project participants to disclose how relevant stakeholders were identified, and the PDDs are usually silent on how the stakeholders were selected.

Furthermore, the CDM rules do not require that stakeholders should be consulted during the design stage of the project. Of the 100 projects assessed for this thesis, only 2 projects consulted with stakeholders during the design stages.[327] These projects obviously exceeded the requirements, as the CDM rules only require consultation with stakeholders during the

[325] This is discussed further in Chapter 6.
[326] See: L. Schneider, 'Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement', 51; and N. Eddy, 'Public participation in CDM and JI projects' in D. Freestone and C. Streck (eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work* (Oxford: Oxford University Press), 2005.
[327] See: 'Kuyasa Low-Cost Urban Housing Energy Upgrade Project, Khayelitsha (Cape Town; South Africa) CDM Project reference 0079 (sectoral scope 3), http://cdm.unfccc.int/UserManagement/FileStorage/FS_305260458. (UNFCCC Website, 16/1/ 2011); and 'Rio Blanco Small Hydroelectric Project' CDM project reference 0028 (sectoral scope 1), http://cdm.unfccc.int/Projects/DB/DNV-CUK1101980215.28/view. (UNFCCC Website 16/1/ 2011).

validation and registration stages. Early consultation during the design and implementation stages of a project benefits both the project participants and stakeholders. This is because early consultation enables project developers to better recognise community needs and also reduces the financial risks associated with projects that do not have community support. Early consultation with stakeholders ensures transparency, it builds community trust and it helps a project avoid conflicts and disputes during the validation, registration and post-registration stages of projects.[328] For instance, according to Lokey, if the local community feels left out of the decision-making process, it is more likely to vandalise or sabotage the implementation of the project.[329]

In addition, the CDM rules do not offer guidance on the appropriate channels which project participants should use to communicate and engage effectively with stakeholders. As is shown later in this thesis, this has led to varying standards for stakeholder participation. For example, in the absence of standards, stakeholders may be consulted using culturally inappropriate methods such as through the internet (for example, a company website) or telephone.[330] The danger in this is that relevant stakeholders may be side-lined and excluded from the consultation process. This is a key failing of the CDM rules because where culturally inappropriate methods are used, it negates the whole purpose of conducting stakeholder participation as the relevant stakeholders are essentially not able to participate effectively, or even at all, in the process.[331] For example, where the internet is used to invite

[328] E. Lövbrand *et al.*, 'Closing the legitimacy gap in global environmental governance? lessons from the emerging CDM market' (2009) 9(2) *Global Environmental Politics* 74 at pg. 86. See also C. Streck, 'New partnerships in global environmental policy: the Clean Development Mechanism' (2004) 13(3) *Journal of Environment and Development,* 312. See also B. Dalal-Clayton and S. Bass, *Sustainable Development Strategies: A resource Book*, 120.
[329] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, 236-237.
[330] See Chapter 5 where the assessment revealed that some project participants conduct stakeholder participation via the company website.
[331] E. Lövbrand et *al.*, (2009), 85.

and consult with local people that have no access to the internet, then they could even be completely unaware of, and uninvolved in, the on-going 'consultation' process.

While acknowledging that national procedures may differ, however, in order to ensure that relevant stakeholders are not side-lined during the consultation process for CDM projects, it is essential that clear international requirements for conducting local stakeholder consultations are established. This is because the level of involvement of host country DNAs in the implementation of CDM projects differs.[332] For instance, the DNA in Brazil provides a minimum list of relevant stakeholders that should be invited to comment on proposed CDM projects in Brazil, a format of the letter of invitation with which stakeholders should be invited, and specific information that should be included in the letter of invitation such as the name and type of project and the proposed project's contribution to sustainable development.[333] For example, a large number of the PDDs assessed did not disclose how they identified relevant stakeholders, while some of the other PDDs stated that the main stakeholder identified for the project is the technology (equipment) supplier, which is usually a company based outside the host country and whose only connection to the project is the supply of equipment used to implement the project.[334]

Furthermore, it is acknowledged in this thesis that the stakeholder consultation process adopted for the different categories of CDM projects may differ. For example, end-of-pipe projects do not necessarily need to include local stakeholders in the consultation process. This

[332] This may be due capacity issues in developing countries or other issues such as the structure and influence of the DNA office, national rules and regulations and so forth.
[333] See Chapter 5 for further discussion on the approval process in Brazil.
[334] CDM project reference 0123 (sectoral scope 3). http://cdm.unfccc.int/filestorage/C7XO4E94AHV6XLF0HS0NYDV5RURXT6/IGFL%20Final%20PDD-Post-Validation-20%20Oct%202005.pdf?t=eGN8MTMwMDczMjE0Ni4zOA==|zkLdUIMnenKOwrIXPXy-h5IrHiU=, 43. (UNFCCC Website, 6 /2/ 2011).

is because such projects are usually implemented in existing factories that retro-fit an emission reduction technology to an existing plant. The appropriate stakeholders for such projects will usually be governmental agencies such as the ministry of environment. However, there are some projects that require active participation and consultation with local communities that are likely to be affected by the proposed project. For example, the relocation of a community as a result of the implementation of a CDM project, will likely affect the livelihood and the mainstay of that community. Such projects will require the active and meaningful participation of stakeholders to ensure that their source of livelihood and other rights are protected.

There is little guidance in the CDM rules on fulfilling the requirement for stakeholder participation. As a result, the process and procedure for the fulfilment of this requirement is decided entirely by the project participants and the host country. Therefore, minimum standards and guidelines, to guide project participants and host countries in the fulfilment and implementation of this requirement, are recommended. Specific recommendations for strengthening the fulfilment and implementation of this requirement are discussed further in Section 3.3 *infra.*

Gold Standard Procedure

The GS provides clear standards and guidelines for preparing for, and conducting the stakeholder consultation process. The GS requires two rounds of stakeholder consultation, local stakeholder consultation and the stakeholder feedback round with clear guidelines and procedure.[335]

[335] Gold Standard Requirement, Rule VIII.b and VIII.d.

However, prior to the consultation process, the GS provides guidelines for preparing for the consultation process, and there are clear guidelines for arranging the stakeholder consultation process. As a first step, the GS provides guidelines for identifying relevant stakeholders to a proposed project. As a minimum, the GS recommends that the following be invited for stakeholder consultation: local people impacted by the project or their official representatives; local policy makers and representatives of local authorities; an official representative of the DNA; Local NGOs working on topics relevant to the project; local GS expert; and international NGOs who support the GS.[336] The GS also establishes clear guidelines for inviting local stakeholder. Some of the methods suggested for inviting stakeholders include newspapers, radio or television advertisements, hand delivery of invitation letter, invitation sent via the post and by email.[337] In addition, the GS stipulates that the invitation should include project documentation such as a non-technical summary of the project.[338]

The next step is the first round of stakeholder consultation process. To fulfil this requirement, the GS stipulates that local stakeholder consultation should include at least one public meeting, open to anyone willing to attend and that the meeting should be conducted in accordance with the guidelines provided in the GS Toolkit.[339] The GS Toolkit provides the following criteria for consultation with stakeholders: project participants should adapt the consultation process to suit the abilities of the different categories of stakeholders invited, so

[336] See GS Toolkit, Table 2.8
[337] Gold Standard Toolkit 2.6.
[338] *Ibid.*
[339] The GS Toolkit provides chronological steps of what is expected from project participants during the consultation process. The toolkit provides five steps that project participants are required to observe for a successful stakeholder consultation process: preparation; consultation meeting; follow-up process after consultation meeting; write a report of the of the outcome of the consultation process; and give feedback to the stakeholders on how their comments have been taken into account. See Gold Standard Requirement, Rule VIII.b 5 and Gold Standard Toolkit 2.6.

that all stakeholders understand the project; the meeting should be well documented; and project participants should provide stakeholders with a non-technical summary of the project. The non-technical summary should be presented in an appropriate local language, to allow stakeholders understand the project.[340] An important feature of this round of consultation is that project participants are required to finalise the project's sustainable development matrix in consultation with stakeholders. Stakeholders are consulted on the results of the self-assessed sustainability assessments, and they are given an opportunity to comment and raise issues of concern to them.[341]

The second consultation process is the stakeholder feedback round which may also include a physical meeting, although it is not mandatory.[342] The purpose of the feedback round it to cover all issues raised from the local stakeholder consultation meeting and address how due account was taken of the comments received.[343] The GS Requirement provides that for the stakeholder feedback round, stakeholders must be provided with the following documents: the local stakeholder consultation report, the revised PDD (where applicable), and the revised GS sustainability assessment Passport, and, if applicable, supporting documentation such as the EIA report.[344]

The GS stakeholder consultation process contains the essential elements for an effective participation process. The GS requirement and the further guidance provided in the GS Toolkit ensures that the procedure adopted by project participants is inclusive. For instance,

[340] Gold Standard Toolkit 2.6. Annex J also provides guidance on stakeholder participation. Such guidance include examples of: non-technical summary of proposed projects; and a newspaper article announcing the date, time, location and agenda for upcoming stakeholder consultation meeting.
[341] Gold Standard Toolkit 2.7
[342] Gold Standard Requirement, Rule VIII.d and Gold Standard Toolkit 2.11
[343] Gold Standard Requirement, Rule VIII.d.1.
[344] Gold Standard Requirement, VIII.d.2

the GS's toolkit provides guidelines for inviting and identifying relevant stakeholders. This guarantees that stakeholders contribute to the project design, ensures that relevant stakeholders are informed about the project in a timely manner and in an appropriate language, and that they are given the opportunity to discuss the social, environmental, and economic impact the project will have on them. During this meeting, both the 'Do No Harm' assessment and the sustainable development matrix are assessed by stakeholders through the use of a blind exercise, i.e. stakeholders are given the opportunity to score the indicators that the project participants assessed, without revealing the project participants' score to the stakeholders during the exercise. The outcome of this exercise enables both sides to decide on the list of indicators and the contributions of the project to sustainable development, the blind exercise also helps to identify likely negative impacts, and it allows both sides to decide on mitigating measures where required.

Addendum

The additional requirement contained in the CDM PS is a marked improvement on the CDM rules on stakeholder participation. The predominant word used in the standard relating to the fulfilment of this requirement is 'shall'. For instance, Paragraph 65 states that "[p]roject participants shall invite local stakeholders to provide comments on the proposed CDM project … and shall demonstrate how due steps/actions were taken to appropriately engage stakeholders and solicit comments." The word 'shall' makes the prescribed standards and guidelines compulsory for project participants, and CDM host countries can build upon these minimum standards when implementing the fulfilment of this requirement. In addition, the CDM PS contains some of the minimum standards and guidelines which this thesis advocates for the effective fulfilment of stakeholders participation process.

For example, the PS specifies that project participants should demonstrate the steps they took to ensure that stakeholders were engaged in an appropriate manner. The standard goes on to specify the ways in which project participants can engage with stakeholders in an appropriate manner. For instance, Paragraphs 65 - 69 lists the required steps to ensure that project participants engage meaningfully with stakeholders. Project participants are required to:

(i) invite local stakeholders to provide comments and demonstrate how due steps were taken to appropriately engage stakeholders and solicit their comments;

(ii) invite comments from local stakeholders in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders, and allows for a reasonable time for comments to be submitted;

(iii) describe the proposed CDM project in a manner that allows the local stakeholders to understand the project activity;

(iv) prepare a summary of the comments provided by local stakeholders; and

(v) demonstrate that they considered all comments received for the proposed project and complete the consultation process before validation of the project.

To validate this requirement, the CDM VVS requires the DOE to review the PDD and conduct interviews with stakeholders (if deemed necessary)[345] in order to assess the adequacy of the stakeholder process conducted by the project participants, and to provide an opinion on the adequacy of same in its validation report.[346]

However, this still does not go far enough to provide the required standards and guidelines that will enhance the stakeholder participation process in the CDM. At best, the CDM PS

[345] Paragraph 139 CDM VVS
[346] *Ibid*. Paragraph 140.

provides further clarification for fulfilling the stakeholder participation process. As a result there is still room for inconsistent interpretations by project participants in the fulfilment, and DOEs in the supervision, of this requirement. For instance, the provision that project participants should demonstrate how due steps were taken to appropriately engage with stakeholders and solicit their comments is vague, as the provision does not provide guidelines on what the 'due steps' are. Furthermore, it does not provide a minimum list of stakeholders that should be consulted and the appropriate means of soliciting comments from stakeholders. Similar to the CDM rules, the CDM PS does not require project participants to consult with stakeholders during the design stage of the project. This is a considerable missed opportunity because during the design stage of the project, project participants are still genuinely open to making changes to the design and implementation plans of the project. Furthermore, the standard is silent on further steps where the DOE determines that the stakeholder process is not adequate. It is unlikely that such a finding will affect the validation and registration status of the project. The effective implementation of this provision, just as in the CDM rules, still depends on the subjective interpretation that project participants and the DOEs give to it.

3.2.3 Environmental Analysis and Environmental Impact Assessment (EIA)

Paragraph 37(c) of the CDM rules provides that

> Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party.

3.2.3 (i) Environmental Analysis

The CDM rules establish a two-step decision-making process before a project performs the EIA process. First, the CDM rules require that the environmental and transboundary impacts of the proposed project should be analysed. If the analysis indicates that the impacts are not 'significant', then the project is not required to go through an EIA procedure. Second, if the project participants or the host country deems that the impacts identified are 'significant', then the project would have to perform an EIA in accordance with procedures stipulated by the host country.[347] In addition to these provisions in the CDM rules, the CDM Manual requires that project participants submit documentation to the DOE on the analysis of the environmental impacts of the project in accordance with paragraph 37(c) of the CDM rules.[348] To validate this requirement, the CDM Manual clarifies that the DOE shall confirm, by means of a document review and/or using local official sources and expertise, that project participants have undertaken an analysis of environmental impacts, and, if required by the host Party, that an EIA has been conducted.

The requirement for analysis of the likely environmental impact of the proposed CDM project is an important requirement because it aids the decision maker in deciding whether the project should conduct an EIA or not. However, the means of fulfilling this requirement is vague, and it is unlikely to highlight or mitigate negative impacts arising from the project. This is because the CDM rules do not define what 'significant impacts' are, neither do they provide the host country or project participants with guidelines on how to identify what impacts on the environment should be considered 'significant.' Therefore, it is likely that the interpretation given to 'significant impacts' by CDM host countries will vary from strict

[347] Decision 3/CMP.1, Annex, Paragraph 37(c). The description of the EIA process for a project is usually contained in section F of the PDD.
[348] EB 55 Annex 1, Paragraph 131.

interpretation to a very lenient definition of the term. Furthermore, in instances where the environmental analysis indicates that projects will have significant negative impacts on the environment, the rule is not clear on what should happen if despite the negative impact identified, the host country does not require an EIA, mitigating measures, or a monitoring plan for such CDM projects.

Furthermore, project participants are not required to present the result of the environmental analysis in the PDD nor is there a requirement to present stakeholders and other interested parties with the report or a non-technical summary of the analysis. The assessment conducted in Chapter 5 indicates that none of the projects assessed stated in the PDD that the results of the environmental analysis were presented to stakeholders during the consultation process. The absence of minimum standards and guidelines does not give stakeholders the opportunity to question and consider the likely environmental impacts of the project and the right to insist that mitigating and monitoring conditions should be imposed.[349]

3.2.3(ii) Environmental Impact Assessment

An EIA is a national procedure for evaluating beforehand, the likely impacts of a proposed activity on the environment.[350] The 'Impact' that is assessed in an EIA is any effect caused by a proposed activity on the environment, including human health and safety, flora, fauna, soil, air, water, climate, or the interaction among these factors. It also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors.

[349] See Section 3.2.5 *infra* on the monitoring requirement for CDM projects.

[350] See Article 1 of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) 25 February1991, in force 10 September 1997, Reprinted in (1991) 30 ILM 802. On EIA generally see J. Glasson *et al.*, *Introduction to Environmental Impact Assessment* 3rd edn. (Abingdon: Routledge, 2005); P. Wathern (ed.), *Environmental Impact Assessment: Theory and Practice* (London: Routledge, 2004); N. Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (Cambridge: Cambridge University Press, 2008); C. Wood, *Environmental Impact Assessment: A Comparative Review* 2nd edn., (Harlow: Pearson Education Limited, 2003); and K. Gray, 'International Environmental Impact Assessment: Potential for a Multilateral Environmental Agreement' (2000) 11 *Colorado Journal of International Environmental Law and Policy* 83 – 128.

An EIA is regarded as one of the tools for achieving sustainable development both nationally and internationally.[351] Holder and Lee, for instance, describe it as an instrument for the practical manifestation of sustainable development.[352] The EIA process is an important process because it aids the decision-making process of, for example, the regulator.[353] It provides the regulator, and other interested parties, with the opportunity to systematically examine the environmental impacts of a proposed project, and alternatives to the proposed project, before a decision is made to allow the project go ahead or not.[354] It also provides an opportunity for public participation, especially by stakeholders.[355] Apart from promoting sustainable development generally, EIAs also contribute to sustainable development indirectly by enhancing the public and stakeholder participation process.[356] Furthermore, it can culminate in follow-up monitoring mechanisms to ensure compliance with conditions for approval.[357] Also, EIA encourages environmental responsibility on the part of project developers and promotes self-regulation.[358]

In addition, several treaties and soft law documents require that EIAs be conducted in specified circumstances or that EIAs be conducted for all projects[359] Agenda 21 and the Rio

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[351] See: P. Sands, *Principles of International Environmental,* 799-800*;* J. Glasson *et al, Introduction to Environmental Impact Assessment,* 8; N. Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration*, 78; C. Wood, *Environmental Impact Assessment: A Comparative Review*, 1.

[352] J. Holder and M. Lee, *Environmental Protection, Law and Policy* 2nd edn. (Cambridge: Cambridge University Press, 2007), 560. Also see J. Glasson *et al, Introduction to Environmental Impact Assessment*, 8;

[353] Glasson *et al., Introduction to Environmental Impact Assessment*, 7.

[354] *Ibid.*

[355] P. Sands, *Principles of International Environmental* Law 2nd Edn. (Cambridge: Cambridge University Press, 2003), 800. See also J. Glasson *et al., Introduction to Environmental Impact Assessment,* 4.

[356] R. Hughes, 'Environmental impact assessment and stakeholder involvement' in A. Donnelly *et al.*, A *Directory of Impact Assessment Guidelines* 2nd edn. (Nottingham: Russell Press, 1998), 21. See also L. Waldegren, 'The Gold Standard validation & verification manual for CDM projects', 47.

[357] J. Glasson *et al., Introduction to Environmental Impact Assessment,* 4.

[358] J. Holder and M. Lee, *Environmental Protection, Law and Policy,* 560.

[359] See the following: The Protocol on Environmental Protection to the Antarctic Treaty (Madrid) 4 October 1991, in force 14 January 1998. Reprinted in (1991) 30 ILM 1461; Furthermore, earlier conventions that did not

Declaration make several references to the importance of EIA in achieving sustainable development.[360] For instance, Principle 17 of the Rio Declaration states that EIAs shall be undertaken for proposed activities that are likely to have significant adverse impacts on the environment. The Espoo Convention states that Parties have an obligation to assess the environmental impacts of projects that might have a significant transboundary impact.[361] Also, international financial institutions such as the World Bank require that applicants submit an EIA statement in support of their application for funding for national projects.[362]

Considering the safeguarding mechanisms built into the EIA, there is insufficient guidance in the CDM rules for project participants, DNAs and DOEs on fulfilling and implementing the requirement for EIAs. This is because the requirement to conduct an EIA is optional and it is dependent on host country environmental regulations. Therefore, the procedure and rigorousness of an EIA will vary depending on the environmental policies and laws of the host country. For instance, in countries that have weak EIA legislation, the EIAs conducted may fall below international standards. Furthermore, because there are no guidelines on the interpretation of 'significant impacts' that should trigger off an EIA, it is unlikely that project participants will voluntarily undertake an EIA. This is because an EIA process in any country

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have provisions requiring EIA have subsequently adopted guidelines requiring EIA. For example, the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar) 2 February 1971, in force 21 December 1975, 996 UNTS 245. Ramsar Convention has subsequently adopted guidelines requiring EIA; see also the United Nations Environment Programme Goals and Principles of Environmental Impact Assessment UNEP Res. GC14/25, 14TH Sess. (1987), endorsed by GA Res. 42/184, UN GAOR, 42nd Sess., UN Doc. A/Res/42/184 (1987) (UNEP EIA Goals and Principles).

[360] See for example, Chapters 35 and 40 of Agenda 21.

[361] Article 2(7).

[362] The following international financial institutions have developed guidelines for EIA process: International Bank for Reconstruction and Development (IBDR) and the World Bank, *Environmental Assessment Sourcebook* Volume II (Washington DC: IBDR and the World Bank, 1996), 1-244; and Asian Development Bank (ADB), 'Environmental assessment guidelines', 1-166. http://www.adb.org/documents/guidelines/environmental_assessment/environmental_assessment_guidelines.pdf (ADB Website, 16/10/2010).

could be a time-consuming and expensive process.[363] According to Meijer and Werksman, "[s]ince a host country generally benefits from a CDM project, the absence of uniform EIA rules for the CDM may create an incentive for the host country to not insist on a thorough EIA in order to make its country attractive for CDM projects."[364]

More importantly, the need to conduct an EIA cannot be triggered by a stakeholder or an independent third party. This is because the decision to conduct an EIA is restricted to the host country and the project participants and their interpretation of 'significant impacts.' This can either be seen as expedient or a denial of stakeholders' rights and there are two sides to this debate. If stakeholders or interested third parties are given the right to trigger an EIA, it could lead to 'not in my backyard syndrome' (NIMBYS) or cause unnecessary delays to the implementation of projects. On the other hand, such right will ensure that projects that are likely to have significant negative impacts on the environment avert their minds to mitigation measures.

More worryingly, the rules are silent on situations where the environmental impacts of a proposed project are considered significant but the host country has no EIA legislation or policies. It would seem that an EIA cannot be conducted for a CDM project implemented in that country, regardless of the significance of the negative impacts of the project. Again, this is a significant shortcoming in terms of the sustainable development objective of the CDM. Also, the rules do not require that projects should adopt mitigation strategies, or even

[363] N. Craik, *The International Law of Environmental Impact Assessment: Process, Substance and Integration*, 29.
[364] E. Meijer and J. Werksman, 'Keeping it clean – safeguarding the environmental integrity of the Clean Development Mechanism' in D. Freestone and C. Streck (eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work* (Oxford: Oxford University Press, 2005), 193 at pg. 210.

compensation measures, for instances where it is determined that the project will have significant impacts that are likely to affect stakeholders.

While it would be redundant and costly for all categories of CDM projects to go through an EIA process, EIAs should be a compulsory requirement for some categories of CDM projects, especially large projects. For example, large hydropower projects could require damming of rivers or redirecting their flow. Such projects will likely have negative environmental and socio-economic impacts on the host community, such as loss of biodiversity in the rivers, loss of livelihood, relocation of communities, the loss of farmlands, and the infringement of fundamental human rights.[365] For example, several NGOs urge the EB to reject proposed large hydroelectric projects for non-compliance with international environmental criteria established by the World Commission on Dams (WCD) criteria. For example, CDM Watch and International Rivers Network (IRN) urged the EB to reject the proposed 'Bayano Hydroelectric Expansion and Upgrade Project in Panama' because the dam, *inter alia,* did not comply with the WCD criteria for implementing hydro projects and it flooded 350 square kilometres of tropical forests. Furthermore, the NGOs claimed that the dam does not have the support of the local community because it has been the subject of a 25-year struggle by indigenous groups to receive adequate compensation for the loss of their lands and increased waterborne diseases.[366] However, despite the on-going opposition, and the evident negative impact on the community and the environment, the PDD made no

[365] H. Reid and K. Swiderska, 'Biodiversity, climate change and poverty: exploring the links' An International Institute for Environment and Development (IIED) Briefing Paper, 2008, 2. http://pubs.iied.org/pdfs/17034IIED.pdf (IIED Website, 45/ 2011). Also see B. Haya, 'Failed mechanisms: hundreds of hydros expose serious flaws in the CDM'. Available at http://www.internationalrivers.org/en/node/2326 (International Rivers website, (20/11/2011).

[366] B. Haya *et al*., 'Damming the CDM: Why Big Hydro is Ruining the Clean Development Mechanism', 10. Available at http://unfccc.int/cop8/se/kiosk/cm2.pdf (UNFCCC website, 20/11/2011).

mention of conducting stakeholder consultations and EIA, which are essential for addressing social and environmental concerns raised by the project.[367]

A project that results in significant negative impacts cannot be said to be consistent with sustainable development, and allowing the registration of such projects would negate the sustainable development objective of the CDM, especially where impacts that should be considered 'significant' are not, and such projects are allowed to be registered.[368] Furthermore, because this requirement is directly linked to an effective stakeholders' participation process, it is almost certain that the deficiencies identified earlier in the stakeholders' participation process, will have a knock-on effect on the effective fulfilment and implementation of this requirement. Although the EIA process can be used as an avenue to guarantee the right of stakeholders to participate effectively in the decision-making process for proposed CDM projects, this opportunity has not been effectively utilised by the CDM rules.[369] Specific recommendations for strengthening the fulfilment and implementation of this requirement are discussed further in Section 3.3 *infra.*

Gold Standard Procedure

Although the GS does not also require an EIA for all its projects, GS projects are required to conduct a 'Do No Harm' assessment as a pre-requisite to the sustainability assessment.[370] This requirement can be likened to the CDM's requirement for environmental analysis, and the means for fulfilling this requirement is clearer under the GS.

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[367] 'Bayano Hydroelectric Project in Panama', available at http://cdm.unfccc.int/filestorage/F/S/_/FS_650592459/Bayano%20PDD.pdf?t=RlN8bTRidzlkfDAtbSfW3-jJI9lore47X9FP (UNFCCC website, 20/11/2011).

[368] According to Eddy and Wiser, Greenpeace emphasised the need for the CDM EB to provide guidelines for EIA procedures in the CDM and to define the 'significant impacts' that can trigger an EIA procedure in the CDM. See Eddy and Wiser, 'Public participation in the Clean Development Mechanism of the Kyoto Protocol' in C. Bruch (ed), *The New "Public": The Globalization of Public Participation*, 206.

[369] N. Eddy and G. Wiser, 'Public participation in the Clean Development Mechanism of the Kyoto Protocol' in C. Bruch (ed), *The New "Public": The Globalization of Public Participation,* 211.

[370] GS Requirement V.II.b.

The 'Do No Harm' assessment is conducted by project participants to determine the risk that the project might result in negative environmental, social, and/or economic impacts during its implementation.[371] The assessment is guided by eleven safeguarding principles derived from the UNDP Millennium Development.[372] The aim of this assessment is to determine if any of the impacts assessed are grave enough for the project to be eliminated from the approval process.

To conduct the assessment, project participants are required to provide answers to the following questions, *inter alia*: does the project respect internationally proclaimed human rights? does it involve in or is it complicit in involuntary settlement? and is it involved in any form of forced or involuntary labour?[373] Paragraph V.II.b.2 provides that projects that violate or risk violating any of the safeguarding principles will not be eligible for registration under the GS, unless the project is modified to comply with these principles or mitigation measures are created to ensure the harmful effects will not occur.

Compared to the requirement under the CDM, this requirement ensures that projects with significant or high negative impacts do not go on to seek registration as GS projects, unless

[371] GS Requirement V.II.b.1, GS Toolkit 2.4.1 and Annex H. According to the UNDP, projects which do not meet international conventions and standards are unsuitable for UNDP and/or the MDG Carbon Facility. Therefore, project participants are required to acknowledge that the 13 safeguarding principles will be adhered to under all circumstances. Available at *europeandcis.undp.org/ (4/5/2012).*

[372] GS Toolkit 2.4.1.

[373] The other Principles include: the project is not complicit in human rights abuses; the project respects dignity, human rights, cultural property and uniqueness of Indigenous Peoples; the project respects the employees´ freedom of association and their right to collective bargaining ; the project does not employ any form of child labour; the project does not involve any form of discrimination based on gender, race, religion, sexual orientation or any other basis; the project provides workers with a safe and healthy work environment; the project takes a precautionary approach in regard to environmental challenges; the project does not involve significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, and (d) recognized as protected by traditional local communities; the project does not involve corruption at any level and; the project does not involve the alteration, damage or removal of any critical cultural heritage.

mitigation measures are introduced for the project. This requirement is also a cost saving measure in many ways because it is a pre-qualification assessment that eliminates projects that are likely to have negative impacts from the early stage and thus save money, time and resources.

EIA is optional for GS projects, dependent on host country regulations, and it can be conducted at the local, regional, and national levels.[374] The requirement for EIA is conducted as part of the sustainability assessment requirement for GS projects, during the stakeholder consultation process. Project participants are required to provide stakeholders with the EIA document, (if applicable), alongside other supporting documents.[375]

Addendum

The CDM PS clarifies the requirement for environmental analysis. Environmental analysis is mandatory for all projects, irrespective of the host country environmental regulations on EIA. The CDM PS uses a stronger language than the CDM rules. Paragraph 63 of the CDM PS provides that project participants shall submit to the DOE documentation on the analysis of the environmental impacts of the project, including its transboundary impacts. This is a marked improvement on the means of fulfilling the requirement under the CDM rules. This is because, as stated earlier, it is not clear from the CDM rules if environmental analysis is compulsory. Paragraph 63 settles this uncertainty and it is made clear that every proposed CDM project is required to undertake an analysis of the environmental impact of the project, irrespective of the environmental regulations in the host country with regard to EIA.[376] However, the CDM PS stops short of requiring that the report of the analysis should be

[374] GS Requirement VII.a.4 and GS Toolkit 2.4.4.
[375] The assessment is based on the UNDP safeguarding principles which were derived from the Millennium Development Goals. See Gold Standard Toolkit T.2.4.1, Annex H to the Toolkit GS Requirement VIII.d.2, and Rule VII.a.1.
[376] Recall that under the CDM rules, the requirement to conduct an EIA is dependent on if the project participants or the host country deems it necessary.

attached to the PDD or that the analysis should be made available to stakeholders during the consultation process.

To validate this requirement, the CDM VVS provides that the DOE shall confirm that project participants conducted an analysis of the environmental impacts of the project, including its transboundary impacts and an EIA if required by the host country or deemed necessary by project participants. Furthermore, the DOE can conduct a review of the environmental analysis document and /or use local official expertise or sources to ensure that the required analysis was undertaken.[377] This is an obvious improvement because it gives the DOE the option to request for the result of the environmental analysis and to also conduct an independent review of the environmental analysis through the interview of local official expertise or sources.

The minimum standards and guidelines provided for fulfilling this requirement will improve its fulfilment and supervision. However, there is still room for improvement. The CDM PS has not resolved the situation where, for example, the result of the environmental analysis indicates that the project will have negative impact and the host country does not require EIA for all CDM projects or for that category of CDM projects.

3.2.4 Additionality

The CDM rules provide that a proposed project activity must be 'additional' before it can be registered as a CDM project. A CDM project is 'additional' if it leads to reductions in emissions of GHGs that are supplementary to any that would occur in the absence of the

[377] CDM VVS, Paragraphs 134, 135 and 136.

proposed CDM project.[378] To show that emissions are 'additional,' project participants have to establish a baseline. A baseline is the scenario that represents the GHG emissions that would have occurred in the absence of the proposed CDM project.[379] Reductions below this baseline are 'additional' reductions, and it is for these that CERs are issued.[380] The CERs generated from CDM projects in non-Annex I Party countries can be used by Annex I Party countries to meet their emission reduction commitments. Theoretically, this would allow Annex I Parties to emit GHGs in their countries over and above their assigned amounts.[381] However, in reality, Annex I Parties must reduce their emissions to meet their emission reduction commitments, or at the very least, maintain their current levels, because most of them currently emit more than their assigned amounts, calculated based on their 1990 emission levels. Therefore, if a non-additional project was registered and earned CERs, the use of the CERs would result in an overall increase in global GHG emissions.[382] Therefore, it is important that CERs represent a real emission reduction in order to promote the overall objective of the climate change regime and to ensure the environmental integrity of the KP system.[383]

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[378] Decision 3/CMP.1, Annex Paragraphs 37(d) and 43. .

[379] Decision 3/CMP.1, Annex Paragraph 44. Paragraph 44 provides that the baseline shall cover emissions from all gases, sectors and source categories listed in Annex A within the project boundary. A baseline shall be deemed to represent reasonably the anthropogenic emissions by sources that would occur in the absence of the proposed project activity if it is derived using a baseline methodology referred to in paragraphs 37 and 38 of the CDM rules. Furthermore, Paragraph 45 provides that the baseline should be established in a transparent and conservative manner and that it should take relevant national or sectoral policies and circumstances into account.

[380] See Chapter 1 for discussion of CERs and their use.

[381] All Annex I Parties have an amount of GHGs that they are allowed to emit, referred to as their 'assigned amount.' This amount is calculated pursuant to their emission reduction commitments, inscribed in Protocol Annex B, and they are not allowed to emit beyond their assigned amounts. See KP, Article 3(1) and Annex B.

[382] L. Schneider, 'Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement', 7.

[383] See the following: A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 248; L. Schneider, 'Assessing the additionality of CDM projects: practical experiences and lessons learned' (2009) 9 Climate Policy 242; and E. Meijer and J. Werksman, 'Keeping it clean – safeguarding the environmental integrity of the Clean Development Mechanism' in D. Freestone and C. Streck (eds.), Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work, 193.

Although the CDM rules provide guidelines that project participants should follow to prove the additionality of a project, the EB created the 'Tool for the demonstration and assessment of additionality' as a general framework for project participants to demonstrate the additionality of proposed CDM projects.[384] This tool is referred to as the 'additionality test' and is used to establish that emission reductions achieved by CDM projects are additional to the baseline scenario. The additionality tool is not mandatory, but simply acts as a guide for project participants and DOEs.[385] However, it is common practice for project participants to utilise it to prove that proposed projects are additional.

To prove additionality, a project proponent must demonstrate a hypothetical reduction in GHGs resulting from the proposed project by comparing the lower emissions that would result from the project against the baseline emissions. The DOE selected by project participants to validate a proposed project must review the PDD and any supporting documentation to confirm that the proposed project would result in a reduction of emissions below the baseline.[386] As a further guidance to the DOE, the CDM Manual further provides that as a means of validation, the DOE shall assess and verify the reliability and credibility of all data, rationales and assumptions used to establish the additionality of the proposed project.[387]

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[384] The latest version of the additionality tool (Version 05) was adopted at the Executive Board's 39th meeting, CDM-EB-39, Annex 10. http://cdm.unfccc.int/EB/039/eb39_repan10.pdf (UNFCCC Website, 16/6/ 2010). See also: A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond,* 54.

[385] Paragraph 28 of Decision 7/CMP.1, Further Guidance Relating to the Clean Development Mechanism provides that "as stipulated in decision 12/CP.10, the use of the 'tool for the demonstration and assessment of additionality' is not mandatory for project participants, and that in all cases the project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board, including those cases where the 'tool for the demonstration and assessment of additionality' is attached to an approved methodology."

[386] See Decision 3/CMP.1, Annex, Paragraph 37(d).

[387] EB 55 Annex 1, Paragraph 95.

Currently, the CDM's additionality test consists of the following four steps: identification of alternatives to the project that are consistent with mandatory laws and regulations in the CDM host country; investment analysis to determine that the proposed project is either not the most financially attractive or not financially feasible without CERs; barrier analysis to determine if there is at least one barrier preventing the implementation of the project; and common practice analysis to determine that the project is not common practice in the host country or, where it is common practice, to determine if there are essential differences between the proposed CDM project and the common practice that can reasonably be explained. It should be noted that the barrier and investment analyses are alternatives and project participants can choose to use either or both. The common practice analysis is used in both the barrier and investment analysis as a credibility check to demonstrate that the project is not common practice. Therefore, the common practice analysis is to complement and reinforce the investment and/or barriers analysis. The component steps and sub-steps are analysed below.

The first step involves the identification of alternatives to the project consistent with current laws and regulations in a host country.[388] This involves two sub-steps: identification of alternatives to the project activity consistent with current laws and regulations; and consistency with mandatory laws and regulations. Firstly, project participants are required to identify realistic and credible alternative scenarios to the proposed CDM project which are available to the project participants or to similar project developers that provide outputs or services comparable with the proposed CDM project.[389] The alternatives identified should

[388] EB 39 Report Annex 10, step 1.
[389] *Ibid.* sub-step 1(a), Paragraph 1.

include: the proposed project undertaken without being registered as a CDM project; other realistic and credible alternative scenario(s) to the proposed CDM project that deliver products or services with comparable quality, properties and application areas; and, if applicable, continuation of the current situation (no project or other alternatives undertaken).[390] Secondly, the project is required to test consistency with mandatory laws and regulations. To do this, the alternative(s) project scenario identified earlier shall be in compliance with mandatory legislation and regulations in the host country,[391] taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations. Alternatives that are not in compliance with mandatory laws and policies may be considered if the project participants can prove that there is widespread non-compliance with the national law or regulation in question.[392] If the proposed project is the only alternative amongst the ones considered by the project participants that is in compliance with mandatory regulations, with which there is general compliance, then the proposed CDM project is not additional.[393]

The test in sub-step 1(a) should result in identified realistic and credible alternative scenario to the CDM project that are in compliance with mandatory legislations, taking into account the enforcement in the host country and EB decisions on national and sectoral policies. The test in sub-step 1(b) should identify realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations.

[390] *Ibid*. sub-step 1a Paragraph 1(a) (b) and (c).
[391] *Ibid*. sub-step 1b Paragraph 2.
[392] *Ibid*. sub-step 1b Paragraph 3.
[393] *Ibid*. sub-step 1b Paragraph 4.

The second and third stages involve the investment and barrier analysis. Project participants can choose to prove either the investment or barrier analysis or both. To use investment analysis,[394] project participants are required to prove that the proposed project is either not the most economically or financially attractive,[395] or not economically or financially feasible without the revenue from the sale of CERs.[396] To determine this, project participants are required to apply simple cost analysis if the CDM project and the alternatives identified in step 1 generate no financial or economic benefits other than CDM-related income. Otherwise, investment comparison analysis or benchmark analysis can be used to prove the additionality of the project.[397] To prove additionality using simple cost analysis, project participants are required to document the costs associated with the CDM project and the alternatives identified in step 1, and demonstrate that there is at least one alternative which is less expensive than the proposed CDM project.[398] If it is concluded that the proposed CDM project is more expensive than at least one alternative, then project participants can proceed to the common practice analysis.

If investment comparison analysis is used, project participants are required to identify a financial indicator, such as the internal rate of return (IRR) or cost-benefit ratio, most suitable for the project type and decision-making context and utilise that to prove additionality.[399] To use the benchmark analysis,[400] project participants are required to identify the most suitable

[394] *Ibid.* A detailed further guidance of the investment analysis is included in Annex 35.
[395] *Ibid*. sub-step 2(a).
[396] *Ibid.* sub-step 2(b).
[397] *Ibid.* sub-step 2a, Paragraph (1).
[398] *Ibid*. sub-step 2b, Paragraph (2).
[399] *Ibid.* sub-step 2b, Paragraph (3).
[400] The benchmark analysis shall be obtained from: government bond rates; estimates of the cost of financing and required return on capital; company internal benchmark, this can only be used for instances where the project upgrades an existing process or uses a resource that is not traded but is available on project site; government/official approved benchmark, where such benchmarks are used for investment decisions; any other indicators, if the project participants can demonstrate that the indicators provided in the tool are not applicable and that their indicator is appropriately justified . *Ibid*. sub-step 2b, Paragraph (6) (a-e).

financial/economic indicator, such as IRR.[401] When applying investment comparison analysis or benchmark analysis, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, and not the subjective profit expectations or risk profile of the project participants.[402] However, the specific financial/economic situation of the company undertaking the project can be considered only where, for example, the project upgrades an existing process or uses a resource that is available on the project site and that is not traded (for example, waste). The investment analysis provides a valid argument in favour of additionality only if it consistently supports the conclusion that the project is unlikely to be the most financially/economically attractive, or is unlikely to be financially/economically feasible.[403] If, it is concluded that the proposed CDM project is unlikely to be the most financially/economically attractive or is unlikely to be financially/economically feasible, then the project participants can proceed to the common practice analysis or they could elect to undertake the barrier analysis as well.

Barrier analysis involves determining whether the proposed project faces barriers that prevent the implementation of the type of project proposed, and do not prevent the implementation of at least one of the alternatives.[404] The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project participants from carrying out the proposed project unless it is registered as a CDM project.[405] However, if the CDM does not mitigate the identified barriers that prevent the proposed project from being implemented, then the project activity is not additional. Some of the barriers may include: investment barriers that are different from the economic/financial barriers discussed in step 2

[401] *Ibid*. sub-step 2b, Paragraph (4).
[402] I*bid*. sub-step 2b, Paragraph (5).
[403] *Ibid*. sub-step 2d, Paragraph (11).
[404] *Ibid*. step 3(a) and (b).
[405] Ibid. sub-step 3a, Paragraph (1).

above;[406] technological barriers such as unavailability in the host country or region of skilled or properly trained personnel to operate and maintain the technology;[407] barriers due to prevailing practice, for example, if the project is the first of its kind in the host country or region;[408] and other barriers.[409] Upon identification of barriers, the project participants are required to demonstrate that the identified barriers would not prevent the implementation of at least one of the alternatives, except the proposed project.[410]

The common practice analysis is a credibility check to complement the investment analysis or barrier analysis. Therefore, unless the proposed project type has demonstrated that it is first-of-its kind project in the host country where it is proposed to be implemented, the analysis must be complemented with an analysis of the extent to which the proposed project type (for example, technology or practice) has already spread in the relevant sector and region.[411] To do this, the project participants must analyse other activities that are operational and similar to the proposed project and, on the basis of this analysis, describe whether and to what extent similar activities have already diffused in the relevant region.[412] If similar activities are widely observed and commonly carried out, it calls into question the claim that the proposed project is financially unattractive or faces barriers. Therefore, if similar activities are identified above, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project is financially/economically

[406] For example, an investment barrier could be non-availability of capital from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. Ibid. sub-step 3a, Paragraph (1) (a).
[407] *Ibid*. sub-step 3a, Paragraph (1) (b).
[408] *Ibid*. sub-step 3a, Paragraph (1) (c).
[409] *Ibid*. sub-step 3a, Paragraph (1) (d).
[410] *Ibid.* sub-step 3b.
[411] *Ibid*. sub-step 4.
[412] *Ibid*. sub-step 4a, Paragraph (1). Note that CDM project activities (registered project activities and project activities which have been published on the UNFCCC website for global stakeholder consultation as part of the validation process) are not to be included in this analysis.

unattractive or subject to barriers. This can be done by comparing the proposed project to the similar activities, and pointing out and explaining essential distinctions[413] between them that explain why the similar activities enjoyed certain benefits that rendered them financially/economically attractive,[414] but which are not available to the proposed project.[415]

The demonstration of additionality has been a controversial issue since the creation of the CDM. According to the various studies conducted on the additionality test, it is doubtful that many of the registered CDM projects are additional.[416] This is because the outcome of the additionality test is not predictable, as it requires the calculation of emission reductions against scenarios that are difficult to verify.[417] Furthermore, the problem of defining and measuring the additional emission reductions arising from a CDM project, as compared to what would have happened under a business-as-usual scenario, has been described as one of the two Achilles' heels of the mechanism.[418] For instance, the three component parts of the additionality test, the investment, barrier and common practice analyses, are subjective, as they are based on information which is usually only available to the project developers and

[413] Essential distinctions may include a serious change in circumstances under which the proposed CDM project will be implemented when compared to circumstances under which similar projects were carried out. For example, new barriers may have arisen, or promotional policies may have ended, leading to a situation in which the proposed CDM project activity would not be implemented without the incentive provided by the CDM. The change must be fundamental and verifiable. Ibid. sub-step 4b, Paragraph 3.
[414] For example, if the existing activities had access to subsidies or other financial flows.
[415] *Ibid*. sub-step 4b, Paragraph 2.
[416] See: A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 270-271; B. Muller, *Additionality in the Clean Development Mechanism, Why and What?* (Oxford: Oxford Institute for Energy Studies, 2009), 8; J. Ellis and S. Kamel, 'Overcoming barriers to Clean Development Mechanism projects', 40. http://www.oecd.org/dataoecd/51/14/38684304.pdf (OECD Website, 15/1/ 2010); and M. Wara and D. Victor 'A realistic policy on international carbon offsets' Stanford University Energy and Sustainable Development Working Paper #74, April 2008. http://pesd.stanford.edu/publications/a_realistic_policy_on_international_carbon_offsets (Stanford University Program on Energy and Sustainable Development Website, 15/1/ 2010.)
[417] As Schneider points out, the major challenge for the additionality test is the fact that it is based on hypothetical scenarios that are very difficult to replicate independently. L. Schneider, *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, (Berlin: Öko-Institut, 2007), 7.
[418] M. Grubb *et al.*, The *Kyoto Protocol: A Guide and Assessment* (London: Royal Institute of International Affairs, 2001), 227

which is difficult to objectively compare and verify.[419] In Schneider's assessment of PDDs for their demonstration of the investment analysis of the additionality test, he noted that the application of the investment analysis varies widely for the projects assessed.[420] According to him, about 30% of the PDDs assessed used a 'black-box' approach, simply stating the outcome of the analysis, without providing the key information and data used to conduct the analysis. As such, an independent party cannot replicate the calculations and justification that the project is additional.[421]

A major shortcoming of the current additionality test is that it could create perverse policy incentives in developing countries.[422] In a bid to ensure that projects pass the additionality test, host countries may refrain from undertaking and adopting domestic climate change mitigation strategies. This is because the adoption of mitigation strategies would make it difficult for proposed CDM projects to pass the additionality test. An example of climate change mitigation strategy could be the introduction by a State of a renewable energy mandate into the national energy mix.[423] For instance, the methodology panel queried the additionality of proposed hydroelectric plants in Costa Rica because of a 1995 national policy requirement that privately generated electricity should derive 20% of generated energy from renewable energy sources.[424] Following from this, Colombia chose not to officially incorporate energy efficiency standards into its energy laws in 2003 and 2004 following a widespread assessment of its CDM potential.[425] The effect of creating perverse policy

[419] *Ibid.*
[420] L. Schneider, *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, 8.
[421] *Ibid. at 9.*
[422] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America,* 118.
[423] *Ibid.*
[424] *Ibid.*
[425] *Ibid.*

incentives in developing countries is that the additionality test conflicts with the CDM's sustainable development objective, which should include the promotion of environmentally-friendly practices and policies, such as renewable energy promotion.

The additionality test and its protection of the environmental integrity of the CDM are fundamental to the integrity of the CDM process. However, if the CDM is to achieve its dual objective, the relevant actors cannot afford to be entirely focused on the effective governance of those requirements that ensure emission reduction at the expense of requirements that promote sustainable development. The additionality test focuses on the emission reduction objective of the CDM and does not consider its sustainable development objective.[426] Currently, the additionality test does not necessarily promote sustainable development because its goal is not to ensure that registered projects are additional in terms of the sustainable development benefits they provide to countries but only that they are additional in terms of the emission reductions they achieve. Whether or not CDM projects provide sustainable development benefits or additional sustainable development benefits is irrelevant and such projects could pass the additionality test, as long as the projects can prove the additionality of the emission reductions achieved.

Gold Standard Procedure

GS project participants demonstrate additionality by using the UNFCCC's 'Tool for the Demonstration and Assessment of Additionality',[427] which has been discussed extensively above. However, note that apart from the requirement to pass the additionality test, Paragraph VII.a.5 of the GS Requirement states that the GS Foundation reserves the right to reject

[426] Recall that Article 12(5) (a-c) of the KP sets out the additionality criteria for a CDM project as follows: (a) Voluntary participation approved by each Party involved; (b) Real, measurable, and long-term benefits related to the mitigation of climate change; and (c) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity. Note that the criteria set out for CDM projects do not include a sustainable development criterion.

[427] GS Requirement VI.b.1.

projects that fail to satisfy the GS requirements on sustainability. Therefore, contribution to sustainable development is one of the eligibility criteria for GS projects, unlike Article 12(5) of the KP which does not include contributions to sustainable development as one of the eligibility criteria for CDM projects.[428] The eligibility criteria for GS projects consist of the following, projects must: be additional; contribute to sustainable development; and result in real, measurable and verifiable permanent emission reductions.[429] The eligibility criteria for GS projects therefore reinforce the importance of projects contributing to the sustainable development of CDM host countries and to the overall climate change process.

Addendum

The CDM PS and VVS do not provide additional standard and guidance that will ensure that the fulfilment of this requirement promotes the sustainable development objective of the CDM. As such, the additional provisions in the CDM PS and CDM VVS will not be considered further in this section.

3.2.5 The Baseline and Monitoring Requirements

The baseline, also known as the 'business as usual' scenario for a proposed CDM project, is the amount of GHG emissions that would be produced in the absence of the project. The baseline forms the basis for calculating a project's emissions reductions and helps determine its additionality.[430] Monitoring is the collecting and archiving of all relevant data in a CDM project scenario, and it is necessary for determining the baseline and for measuring the

[428] Recall Article 12(5) of the KP states the eligibility criteria for CDM projects as: voluntary participation of each Party involved; real, measurable, and long-term benefits related to the mitigation of climate change; and reductions in emissions that are additional to any that would occur in the absence of the certified project activity. Also see further discussions in Chapter 3, Section 3.3.2.
[429] GS Requirement III.a.1.
[430] See Decision 3. CMP.1, Annex Paragraphs 44 and 45. See also M. Lee *et al*., *Baseline Methodologies for Clean Development Mechanism Projects: A Guidebook* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2005), 14.

emission reductions achieved as a result of the implementation of a CDM project.[431] To fulfil the baseline and monitoring requirements, the CDM rules provide that CDM projects should only adopt baseline and monitoring methodologies approved by the EB, as a prerequisite for proving the additionality of a project.[432] The CDM Manual reaffirms that as a means of validation, the DOE shall ensure that the baseline and monitoring methodologies selected by the project participants comply with EB approved methodologies.[433]

The requirement for baseline and monitoring, like the requirement for additionality, aims to ensure that emission reductions achieved during the implementation of a CDM project are additional to what would have happened in the absence of that project. This requirement does not promote the sustainable development objective of the CDM because it only requires monitoring of emission reduction achieved during project implementation. It does not require monitoring of the sustainable development impact at the implementation stage of the project. Apart from the initial confirmation from the host country that the project assists it in achieving sustainable development, the rules do not require that the sustainable development impacts and contributions of CDM projects be continually assessed the way that the emission reduction of CDM projects are monitored and verified throughout the lifespan of the project.[434] Thus, while the CDM rules require a monitoring plan for all categories of CDM projects, in order to collate data on GHG emission reductions achieved by CDM projects, the

[431] Decision 3 CMP 1, Annex paragraph 53(a). Also, the Glossary of CDM Terms (Version 5) defines monitoring as collecting and archiving all relevant data from a project necessary for determining the baseline, and for measuring emission reductions achieved by the project within the project boundary and any leakages. http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf (UNFCCC Website, 4 /5/ 2011).
[432] Decision 3. CMP 1, Annex, Paragraph 37(e) (i).
[433] EB 55 Annex 1, Paragraph 65.
[434] C. Voigt, 'The deadlock of the Clean Development Mechanism: caught between sustainability, environmental integrity and economic efficiency' in B. Richardson *et al. Climate Change and Developing Countries: Legal and Policy Challenges for the World Economy*, 249.

rules do not require that environmental and other socio-economic impacts that may result from the implementation of CDM projects be monitored during the lifespan of the project.[435]

This is an important omission because the implementation of CDM projects may result in other socio-economic and environmental impacts that may be negative or that may affect sustainable development at local, regional, and national levels. Some of the likely negative environmental impacts from the implementation of CDM projects include, *inter alia:* emission of other atmospheric pollutants arising from the implementation of CDM projects;[436] production of solid waste; and impacts on biodiversity.[437] Potential economic and social impacts at local, regional and national levels include, *inter alia*, increased transaction cost due to the need for additional information and training and further concentration of income distribution in a select few.[438]

To ensure that CDM projects contribute to sustainable development and that projects do not have negative impacts, it is essential to monitor the sustainable development indicators of projects. This is because monitoring will determine if the effect of the implementation of a project on those indicators have been positive or negative. For example, the implementation of a project could be resulting in trade-offs between the different indicators of sustainable development. For example, despite leading to job creation, the implementation of a project could result in loss of biodiversity. Issues such as these will not come to light if the impact of the project is not monitored. Furthermore, without adequate monitoring, it will be impossible to determine if the sustainable development claims made in the PDD were achieved and if the

[435] S. Thorne and E. La Rovere, 'Criteria and indicators for appraising Clean Development Mechanism (CDM) projects', 20.
[436] Such as oxides of sulphur, nitrogen, and radioactive waste.
[437] S. Thorne and E. La Rovere, 'Criteria and indicators for appraising Clean Development Mechanism (CDM) projects', 20.
[438] *Ibid.*

project is resulting in negative impacts that were not envisaged during the design of the project. Furthermore, monitoring allows lessons to be learnt from the implementation of the project, bearing in mind that CDM projects usually have a lifespan of over 21 years. Post-registration monitoring is also important because not all CDM projects are required by CDM host countries to conduct EIA. Therefore, the inclusion of a monitoring requirement will ensure that possible negative and positive impacts that may likely result from the implementation of CDM projects, are properly addressed and harnessed where applicable.[439] Specific recommendations for strengthening the fulfilment and implementation of this requirement are discussed further in Section 3.3 *infra.*

Gold Standard Procedure

The GS requires a sustainability monitoring plan to monitor the impact of project activities on sustainable development. Monitoring will ensure that implementation of the project (post-registration) has indeed contributed to sustainable development (as assessed pre-registration). The monitoring requirement required by the GS is *ex post* and it is used to ascertain if the project not only reduces GHG emissions, but that it actually contributes to sustainable development, as assessed *ex ante*.[440] Paragraph VII.d.1 of the GS requirement states that GS projects must develop a sustainability monitoring plan to monitor the impact that the project has on sustainable development and to verify if the project has indeed contributed to sustainable development, in order to assess its eligibility for GS certification.[441]

To monitor the sustainable development contributions and impacts of GS projects, project participants are required to identify parameters that can be used to properly monitor each non-neutral sustainable development indicator over the crediting period and on a recurrent

[439] S. Huq, 'Applying sustainable development criteria to CDM projects: PCF Experience', 21.
[440] This is the assessed conducted during the sustainable development matrix.
[441] Also see GS Toolkit 2.4.3.

basis, to measure the impact of the project on sustainable development indicators.[442] The indicators are also required to be monitored over the crediting period, on a recurrent basis, and verified during each verification period, as well as during each mandatory site-visit.[443] In addition, the mitigation measures introduced to mitigate identified negative impacts during the 'Do No Harm' assessment and the sustainability assessment are monitored. The result from the monitoring exercise is used to verify if GS projects have indeed contributed to sustainable development and are consequently eligible for the issuance of GS VER credits.

The GS requirement for monitoring is essential to its sustainable development objective because it provides an opportunity to reassess the sustainability assessment conducted before the implementation of the project and it also allows monitoring of the impact of the project during its implementation. This *ex post* monitoring requirement will most likely ensure that project participants exercise more care and attention during the implementation of the project.

Addendum

Similar to the CDM rules, the CDM PS and VVS do not provide additional standard and guidance for fulfilling this requirement. The CDM PS does not require monitoring of the sustainable development impact of a project during implementation, and the DOE is not required to verify that sustainable development is achieved during the implementation of the project. The absence of follow-up monitoring means that project participants are not held accountable. This is a considerable missed opportunity in the CDM to strengthen the weak sustainability criteria of host countries and to ensure that CDM projects do not result in negative impacts compared to the baseline situation. Furthermore, the absence of sustainable development follow-up assessment means that CDM projects are not held accountable to the

[442] GS Requirement VII.d.2. See Section 3.3 *infra* and Table 3.1 for further discussion and examples of indicators and parameters.
[443] *Ibid*.

host country. It is imperative to introduce detailed *ex ante* assessment of potential impacts and to continuously monitor whether the claims made in the PDDs still obtain during the implementation of the project. CDM projects should be required to submit a sustainable development monitoring plan which ensures compliance with the 'Do No Harm' assessment, the sustainability assessment, and any other mitigation measures. Furthermore, the monitoring plan should be monitored and regularly verified by the DOEs. Clear guidelines should be developed on the verification of the sustainability criteria and indicators by DOEs.

3.2.6: Requirement for Monitoring, Verification and Reporting

Verification is the periodic independent review and *ex post* determination of the monitored reductions in emission during the verification period.[444] The verification of CDM projects is usually carried out during the implementation of a project by an appointed DOE. Essentially, the project participants monitor and keep records of the emission reductions achieved as a result of the implementation of a CDM project through the monitoring plan,[445] while the DOE confirms the authenticity of the reductions during the verification period, through the verification report.[446]

The V & R requirements do not require monitoring of sustainable development impact during the implementation of projects. Therefore, it will be impossible for the DOE to verify the sustainable development impact of the project during the verification period. The DOE is only required to verify the emission reductions claimed by project participants. This requirement will not be discussed further because there is considerable overlap between this

[444] Decision 3. CMP 1, Annex, Paragraph 61. Monitoring has been discussed earlier in section 4.2.5.
[445] *Ibid*. Annex, Paragraph 56.
[446] *Ibid*. Annex, Paragraph 62(h).

requirement and the baseline and monitoring requirement which has been discussed extensively in Section 3.2.5 above.

3.3 Analysis of the Validation and Registration Requirements

Taken together, the provisions in the CDM rules regarding the V & R requirements are limited in their potential to promote the CDM's sustainable development objective. However, the provisions of the CDM PS and the CDM VVS improve the fulfilment, supervision and implementation of the V & R requirements, albeit in a very small way.

The CDM rules, for those V & R requirements that are regarded as tools for promoting sustainable development, lack the necessary minimum standards and guidelines to ensure that they are fulfilled by project participants, implemented by DNAs and supervised by DOEs, in a way that will promote sustainable development. However, some of the issues raised from the analysis of the CDM rules and the CDM Manual have been addressed by the new CDM PS and CDM VVS. For example, the requirement for stakeholder participation is improved by the CDM PS and VVS; for instance, the PS specifies that project participants should demonstrate the steps they took to ensure that stakeholders were engaged in an appropriate manner. Even so, the further clarification in CDM PS falls short of the minimum standards and guidelines advocated by this thesis.

One significant addition to the CDM PS and the VVS is that they both have paragraphs for 'terms' and 'definition' which interprets the language of the provisions. For instance, the PS states that 'shall' indicates requirements to be followed by project participants, 'should' is used to indicate that among several possibilities, one course of action is recommended, and

'may' is used to indicate what is permissible.[447] This is an improvement on the CDM rules because the language of the CDM PS clarifies requirements that are mandatory for project participants and those that are not. For example, the CDM PS makes it clear that an environmental analysis is compulsory for all projects, by using the word 'shall'[448] as against 'have'[449] used in the CDM rules. Therefore, by defining what is obligatory and permissible with regards to the V & R requirements, the new regulatory framework improves the way project participants fulfil the requirements and this will have a positive impact on promoting the sustainable development objective of the CDM.

The analysis of the V & R requirements shows that the V & R requirements can be fulfilled in a haphazard manner, given that the V & R requirements contain no required sequence or a link between the requirements. Unfortunately, the CDM PS and the CDM VVS do not cure this defect. For instance, the CDM rules and the CDM PS and the CDM VVS do not establish the sequence in which the V & R requirements should be fulfilled by project participants. On the other hand, the GS requirements are fulfilled in a sequential manner and the result of one requirement ties into the fulfilment of the next requirement. The GS sustainability assessment consists of four steps that are fulfilled in a sequential manner. The 'Do No Harm' assessment is the first requirement, followed by the sustainable development matrix, then the two-step stakeholder consultation, and finally the sustainability monitoring plan. These requirements have to be fulfilled in the sequence cited above and the result of one step ties into what is required to fulfil the next step. For example, the results of the self-assessed 'Do No Harm' assessment' and the sustainability assessment are presented to stakeholders at the first round

[447] Paragraph 13(a-c), CDM PS. Also see Paragraph 10(a-c) of the CDM VVS.
[448] Paragraph 63 states that [p]roject participants shall carry out an analysis of the environmental impacts of the proposed CDM project activity … including transboundary impacts.
[449] Paragraph 37(c) states that [p]roject participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts.

of the stakeholder participation meeting and the results are discussed and modified, if required, in collaboration with local stakeholders. An analysis of the V & R requirements indicates that in order for their fulfilment to promote sustainable development, there has to be an integrated approach and a link in their fulfilment in such a way that the outcome of one requirement ties into the fulfilment of another.

The CDM rules have failed to effectively integrate the CDM's sustainable development objective into its procedural and institutional structures. While the CDM rules provide elaborate guidelines and structures to govern the emission reduction objective of the CDM, for example through the additionality test and the baseline and monitoring requirement, the CDM rules have failed to establish standards and guidelines to ensure the effective fulfilment of the CDM's sustainable development objective. Although the CDM PS and the CDM VVS attempt to incorporate the CDM's sustainable development objective into the V & R requirements, by requiring project participants to explain the contribution of their project to sustainable development, the requirement is not detailed enough and is therefore inadequate to promote sustainable development. As discussed in Chapter 2, the principles of sustainable development are important because they provide a framework for the implementation of sustainable development. Some of the principles include eradication of poverty, sustainable use of natural resources, and the right to a healthy environment. Unfortunately, many of these principles find no place in the V & R requirements, though one or two of them, such as the sustainable use of natural resources and the alleviation of poverty could have been included in the V & R requirements.

This chapter advocates the creation of minimum standards and guidelines that project participants and CDM host countries should not fall below, in the fulfilment and the

implementation of the V & R requirements. This is because currently, the CDM rules provide a ‘checklist’ of requirements to be fulfilled by project participants, without setting out minimum standards for fulfilling those requirements and the CDM PS and the VVS do not go far enough to provide the required standards and guidelines. The setting of standards, if any, is left to CDM project participants and at best to CDM host countries. Undoubtedly, this will result in varying standards of fulfilment and implementation amongst CDM project participants and CDM host countries, and this will hamper the ability of the CDM and its V & R requirements to promote sustainable development. Furthermore, the creation of minimum standards and guidelines will also encourage host countries to establish a structured framework for the implementation of the V & R requirements. This is because they can build upon the minimum standards and guidelines established by the CDM, for their approval procedure and the implementation of the V & R requirements. The minimum standards advocated here are internationally accepted standards for fulfilling those V & R requirements that will promote sustainable development. This will ensure that, at a minimum, the V & R requirements are fulfilled and implemented in a manner that will promote sustainable development. Furthermore, this thesis advocates that the V & R requirements should be an avenue to foster policy development and reforms that will promote sustainable development in CDM host countries. The following additional standards and guidelines are recommended.

With regard to assessing the sustainable development contributions, an international sustainability assessment process with clear criteria and indicators should be introduced for CDM projects. As discussed in Chapter 2 and in this chapter, one of the key challenges of the CDM in achieving its sustainable development objective is the lack of an internationally agreed set of criteria and indicators for measuring the sustainable development contributions of proposed CDM projects. In light of this, several research centres, NGOs, UN agencies and

other focus groups have conducted studies to develop sustainable development criteria and indicators to assist CDM host countries in their assessment of the sustainable development contributions of proposed CDM projects, and to support the CDM in realising its sustainable development potential.[450] These studies attempt to identify standards or indicators that can be applied universally to measure the sustainable development benefits of proposed CDM projects. The criteria and indicators will allow project participants demonstrate clearly the sustainable development benefits of the proposed project. Although there is a degree of subjectivity involved in such assessment because it is qualitative, such assessment, for example, the GS sustainable development matrix, is transparent, replicable and it is presented in easily accessible format. The criteria and indicators adopted should be flexible in order to accommodate the circumstances of individual projects, while setting boundaries for establishing clear sustainable development contributions that can be monitored and verified. In addition, to ensure flexibility and to avoid unnecessary cost, only criteria that will be

[450] See the following studies: 'The Gold Standard Requirements' hereinafter called GS requirement, (version 2.1), available at http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Requirements-11.pdf and 'The Gold Standard Toolkit' hereinafter called GS Toolkit (version 2.1), available at http://www.cdmgoldstandard.org/wp-content/uploads/2011/10/GSv2.1_Toolkit_Clean-11.pdf . (The Gold Standard Foundation Website, 17/3/ 2011). These documents set out the principles and rules by which Gold Standard projects are carried out. See also: the SouthSouthNorth, *Sustainable Development Appraisal and Ranking Matrix Tool* (Cape Town*:* SouthSouthNorth) 1-12; M. Lee (ed.), *CDM Information and Guidebook* 2nd Edn. (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2004), 17-28; L. Waldegren, 'The Gold Standard validation & verification manual for CDM projects', http://www.cdmgoldstandard.org/fileadmin/editors/files/6_GS_technical_docs/manuals_and_methodolgies/GS%20VVM%20CER.pdf, 38-40. (The Gold Standard Foundation Website, 17/3/ 2011); C. Sutter, *Sustainability Check-Up for CDM Projects: How to assess the sustainability of international projects under the Kyoto Protocol,* (Berlin: Wissenschaftlicher Verlag, 2003), 207. Sutter developed the Multi-Attributive Assessment of CDM (MATA-CDM) methodology; Olsen and Fenhann, (2008), 2819-2830. K. Olsen and J. Fenhann developed 13 sustainable development criteria through a method they called the 'taxonomy' method; R. Heuberger *et al*, 'CDM projects under the Kyoto Protocol: a methodology for sustainability assessment – experiences from South Africa and Uruguay' (2006) *Environment, Development and Sustainability* 1-16*;* S. Huq*, '*Applying sustainable development criteria to CDM projects: PCF Experience' PCF*plus* Report 10 Washington DC, April 2002, http://pubs.iied.org/pdfs/G00083.pdf (International Institute of Environment and Development (IIED) Website, 17/3/2011) ; A. Brent *et al*., 'Evaluating projects that are potentially eligible for clean development funding in the South African context: a case study to establish weighting values for sustainable development criteria' (2005) 10 *Environment and Development Economics* 631-649; E. Boyd *et al.,* 'Reforming the CDM for sustainable development: lessons learned and policy futures (2009) 12 *Environmental Science & Policy* 820-831; and S. Thorne and S. Raubenheimer, 'Sustainable development (SD) appraisal of Clean Development Mechanism (CDM) Projects – Experiences from the SouthSouthNorth (SSN) Project', 54-70. Note that different research studies have termed this in different ways, such as, inter alia, international standards, global checklist, guidelines and defined criteria for sustainable development.

affected by the project should be assessed. One of the advantages of establishing internationally acceptable sustainable development criteria and indicator for assessing CDM projects is that it will build the capacity of host countries to assess proposed projects, whether CDM or not. Another advantage is that it will foster policy development and reforms in CDM host countries. The following paragraph presents an example of criteria and indicators for measuring the sustainable development contributions of proposed CDM projects.

The GS Toolkit and its Annex I contains the 'sustainable development matrix' in which project participants justify how their projects score against a set of pre-determined sustainable development criteria, indicators and possible parameters for measuring the sustainable development impact of projects. To allow for a detailed scoring, twelve specific indicators are considered under: environment – air quality, water quality and quantity, soil condition, other pollutants and biodiversity; social – quality of employment, livelihood of the poor, access to affordable and clean energy services, and human and institutional capacity; and economic and technological development – quantitative employment and income generation, balance of payments and investment and technology transfer and technological self-reliance. Identified parameters are used to monitor the impact of the project on each identified indicator.

To score the indicators, project participants are required to briefly describe what the baseline scenario is for the relevant indicator, and the relevant explanations and parameters under the different indicators[451] are scored 'negative', 'positive' or 'neutral', in comparison with the

[451] An example of the indicator for 'biodiversity' under environment are changes compared to the baseline is: number of genes (i.e., genetic diversity within a species) species and habitats existing within the project's impact boundaries; alteration or destruction of natural habitat; and depletion level of renewable stocks like water, forests, fisheries.

baseline scenario.[452] Indicators with negative impacts are scored '–', although negative indicators can potentially be remedied with mitigation measures. The proposed mitigation measures as well as all non-neutral indicators are required to be monitored. Neutral impacts, including negative impacts that are remedied with mitigating measures, are scored '0', positive impacts in comparison with the baseline are scored '+'. All indicators in the matrix have the same weight. To be eligible under the GS, projects must contribute positively to at least two of the three categories and be neutral in the third category. If the project fails the sustainability assessment, the project can be altered and additional mitigation measures could be implemented or it will be refused registration as a GS project. The advantage of using such matrix is that it gives a detailed description of the indicators being assessed, it provides possible parameters of what the indicators are, and it allows for replication and independent assessment and analysis of the results.

The indicators contained in Table 3.1 below have been adapted from Annex I of the GS Sustainable Development Matrix.[453] The indicators cover environmental protection, social and economic and technological development dimensions of sustainable development.[454]

Table 3.2: Sustainable Development Criteria and Indicators for Assessing Proposed CDM projects

Criteria	**Indicators**	**Parameter**
Environment	**Water Quality and Quantity** Water quality refers to	**Quality:** Levels of: Biological oxygen demand

[452] An example of the parameter for 'biodiversity' under environment are: the number of affected and/or threatened Plants ; and number of affected and /or threatened mammals, birds, reptiles, fishes, and other species and habitats. Apart from the parameters given in the matrix, project participants can provide their chosen parameters and a justification of the parameter chosen.

[453] http://www.cdmgoldstandard.org/wp-content/uploads/2012/05/v2.2_ANNEX-I.pdf (Gold Standard website 1/5/2012).

[454] There are some drawbacks that have been identified in measuring the sustainable development contributions of projects, such as: it involves some subjectivity on the part of the person assessing the project; and different project assessors and assessment procedures may assign an indicator to different components of sustainable development. For example, while some assessors may classify job creation under the economic component of sustainable development, others may classify it under the social component of sustainable development.

	changes compared to the baseline in: • Release of pollutants and its impacts on the environment and human health, including biological oxygen demand and chemical oxygen demand, thermal pollution, mercury, Si_x, NO_x, POPs, lead, coliforms (bacteria from animal waste). Water quantity refers to changes in water balance and availability in ground and surface water	Chemical oxygen demand Thermal pollution Mercury SO_x NO_x POPs Lead Coliforms (bacteria from animal waste) Quantity: Water used in the process. Indirect parameters like fuel wood consumption etc. that can be proven to be linked to decreased surface water run off etc.
	Contribution to Biodiversity This refers to changes compared to the baseline in: • Number of genes (i.e., genetic diversity within a species) species and habitats existing within the project's impact boundaries. • Alteration or destruction of natural habitat • Depletion level of renewable stocks like water, forests, fisheries	Number of affected and/or threatened Plants Number of affected and /or threatened mammals, birds, reptiles, fishes, and other species and habitats
Social	**Quality of employment**: This refers to changes compared to the baseline in: • Labour conditions, such as Job-related health and safety Qualitative value of employment, such as whether the jobs resulting from the project activity are highly or poorly qualified, temporary or permanent etc.	Training, workshops etc. Labour conditions

	Access to affordable and clean energy services This refers to changes compared to the baseline in: • Presence, affordability of services and reliability of clean energy services in the local area or households	Change in Energy use Change in traditional fuel Consumption (e.g. % of total energy requirements) Electricity consumption per capita (kilowatt-hours) Reduced black outs, fluctuations, etc.
Economic and Technological	**Quantitative employment and income generation** This refers to changes compared to the baseline in: • Number of jobs • Income from employment (with salaries at par or better than the average local/sector wage level)	Household income generated from the project Number of jobs created
	Technology transfer and technological self-reliance This refers to changes compared to the baseline in: • Technology development as well as adaptation of new technologies to unproven circumstances. Technology can be sourced from outside or inside the country as long as it is new to a particular region and introduced in a proven sustainable way.	Number of workshops, seminars organised, and training-related opportunities Held for masons/external audience who would be directly involved in replication of the technology Number of participants who attend those capacity building activities

Source: Annex I Guidance on Sustainability Assessment (Gold Standard Matrix)[455]

The above GS sustainability matrix is a practical indication that despite the uncertainty surrounding sustainable development as a concept in international law and indeed in the

[455] Available at http://www.cdmgoldstandard.org/wp-content/uploads/2012/05/v2.2_ANNEX-I.pdf (Gold Standard Website, 1/5/2012).

CCR,[456] the sustainable development impact and contribution of proposed projects can be assessed pre-registration and also monitored post-registration. Although there is some subjectivity involved in the GS matrix assessment, some of its key advantages are that the assessment is transparent, it can be duplicated, and it ensures project participants are mindful of the impact of their project on the sustainable development indicators assessed.

With regard to the requirement for stakeholder participation, this thesis recommends that a structured stakeholder participation process should be introduced for CDM projects. The following minimum standards and guidelines will safeguard the interest of stakeholders, and it will ensure that the process promotes sustainable development in host countries. Project participants should be required to consult with stakeholders during the design stage of the project, when the project is still open to changes and modifications in its implementation. Furthermore, project participants should actively invite participation through appropriate media such as local bulletin boards, newspapers, and other appropriate media. In addition, as a minimum, invitation letters should be sent to the following stakeholders; local people likely to be affected by the project or their official representatives; local policy makers and representatives of local authorities; the DNA of the host country; and local NGOs interested or working in the area related to the proposed project and the DOE selected to validate the project. In addition, the letters of invitation should include a non-technical summary of the project activity in an appropriate local language(s) (bearing in mind that majority of stakeholders in CDM host countries may not speak English), the result of the sustainable development matrix recommended above, a simplified non-technical summary of the PDD, and the environmental analysis report. These are essential tools that will help stakeholders prepare for a meaningful consultation process with project participants.

[456] See the discussions in Chapter 2.

This thesis recommends that at a minimum two rounds of stakeholder consultation process should be introduced for CDM projects, a stakeholder consultation meeting, conducted prior to the validation but during the design stage of the project, and a feedback session, conducted during the validation process. The stakeholder consultation meeting should include at least one physical meeting, and depending on the stakeholders invited, the meeting should be conducted in an appropriate local language. As a minimum, the following should be presented at the meeting: the project; results of the sustainable development matrix; and report of the environmental analysis. In addition, stakeholders should be given an opportunity to contribute to the assessment result, and the responsibility for monitoring sustainable development indicators, mitigation measures and grievance procedures, during the implementation of the project, should be finalised at the meeting. This thesis also recommends that a report of the consultation should be prepared and made available at the local government office, for stakeholders and other relevant government officials. The report should include: all comments received during the consultation process; how those comments have been taken into account in the project design; the result of the finalised sustainable development matrix; and if negative impacts were identified, the mitigating measures agreed at the meeting. The feedback session should be an opportunity to ascertain from the stakeholders if their comments, from the consultation meeting(s) have been addressed sufficiently. The feedback session should include all stakeholders that participated in the consultation process and it does not necessarily have to be a physical meeting. The second round could be conducted during the validation process.

Apart from the foregoing recommendations, this thesis recommends that the EB should establish a grievance mechanism to allow local stakeholders initiate the review of an existing

project that is in violation of national rules and regulations or international treaties and conventions. Therefore, this thesis recommends that the EB should establish a grievance mechanism for aggrieved stakeholders. This is especially important to resolve issues that arise during the implementation of the project. For instance, the grievance mechanism should be established to resolve issues that were not envisaged during the design and validation stages of the project or issues that arise as a result of the implementation of the project. For example, a project may result in negative impact on one or more of the sustainable development indicators.

With regard to the requirement for environmental analysis and EIA, there is need for further clarification on the meaning of 'significant impact' that can trigger the need for EIA. Currently, neither the CDM rules nor the CDM PS defines what 'significant impact' means and it is left to the project participant and the host country DNA to define 'significant impact' for CDM projects. This thesis further recommends that this requirement should be replaced with the GS 'Do No Harm Assessment'.

With regard to the baseline and monitoring requirement, it is hereby recommended that the CDM project should be required to monitor the sustainable development indicators of the project, verify that the project indeed contributes to sustainable development, and does not result in negative impacts. Therefore, the monitoring plan required by the CDM rules should include a sustainable development monitoring plan, as part of the requirements for the validation of CDM projects. This will ensure that projects do not result in negative impacts during implementation and it will allow mitigating measures to be introduced where required.

The EB should also address the situation where a DNA revokes the LoA issued to a registered CDM project. For instance, a registered project that got the approval of the DNA but subsequently violates national laws. Lastly, this thesis recommends that CDM projects should be penalised for not achieving their sustainable development claims and for having negative impacts on sustainable development indicators. Currently, CDM projects are only penalised for not achieving their estimated emission reduction during the verification and certification process. It is assumed that DNAs approve CDM projects based on their undertaking to contribute to sustainable development in host countries, therefore, CDM projects that do not achieve the sustainable development benefits claimed in their PDDs should be penalised, by awarding such projects fewer credits.

This thesis also recommends that the CDM EB should provide adequate guidelines to DOEs on how to validate the V & R requirements. For instance, with regards to validating the requirement for stakeholder's participation, the EB should provide guidelines on the adequacy of the stakeholder participation process. Also, the EB should provide clear guidelines on the appropriate stakeholders for each category of CDM projects. As discussed earlier, the stakeholder that should be consulted for an end-of pipe CDM project in sectoral scope 11 should be different from the stakeholders consulted for a sectoral scope 1 hydro project. The guidelines should also clarify the appropriate means of contacting and inviting stakeholders to the consultation process. For instance, if the stakeholders are largely illiterate, then invitation placed in a newspaper will not be sufficient, but invitation on local radio or on a village billboard will be more appropriate in this situation. In addition, the guidelines to DOEs should specify the type of information that project participants should make available to stakeholders, such as the PDD, EIA and the result of the sustainability matrix. For example, project participants should be provided with a non-technical summary of the PDD,

the PDD translated into the local language(s), the EIA, the sustainable development matrix and the sustainability monitoring plan.

The recommendations made herein are by no means rigid; host countries can establish additional rules and regulations to regulate CDM activities within their jurisdictions.[457] The assessment and analysis conducted in Chapter 5 confirms that the existence of stringent project approval rules in a host country does not make it less attractive to CDM investors. Therefore, this creates an opportunity for CDM host countries to enact rules and regulations that are suitable and appropriate to their existing laws. Such laws will also recognise the distinct circumstances of the host country and enhance its development priorities. Curnow and Hodes note that some host countries have passed laws to govern investment in CDM projects, such as: the terms and the type of involvement of entities in the host country; ownership of CDM projects and CERs accruing from such projects; and the price at which CERs generated by CDM projects in the host country can be sold.[458]

Compared to the CDM rules, the GS puts the sustainable development objective on the same footing as emission reduction objective. Its integrated approach to sustainability assessment ensures a structured fulfillment, implementation and supervision of the requirements. This is because the GS provides project participants, host countries, and the DOEs with the necessary guidelines and minimum standards required, to assist them fulfil, implement and supervise the validation requirements in a manner that will promote sustainable development. Furthermore, GS framework ensures that project participants think carefully of the benefits and possible negative effects of their project, it ensures that mitigation measures are

[457] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 12.
[458] *Ibid*.

introduced, and where mitigation measures do not eliminate the negative effects, it ensures that such project does not pass its certification process. The application of the GS requirements is flexible, the GS assessment is not applied as a strict tool but it accommodates the different circumstances of each project within its defined framework.

It is important to highlight that the effective fulfillment and implementation of the V & R requirements alone cannot guarantee that CDM projects will contribute to sustainable development of the host country. This is because the CDM cannot resolve some of the underlying challenges of implementing projects in developing countries, which are influenced by host country conditions, such as lack of infrastructures.[459] Furthermore, achieving sustainable development in the CDM depends greatly on the willingness and the ability of the CDM host country to ensure that requirements that will promote its sustainable development are fulfilled and implemented effectively. It will also depend on the ability of the host country to attract projects that enhance their defined sustainable development priorities and the commitment of CDM project participants to promote sustainable development.

The recommendations made herein will not add substantial cost to the validation and registration and the implementation stages of the project but it would ensure that the fulfilment and implementation of the V & R requirements promote sustainable development in CDM host countries.

This author recognises that some of the above recommendations raise issues of sovereignty and the prerogative that host countries have to define their sustainable development priorities.

[459] This has been discussed extensively in Chapter 1, Section 1.5.

For instance, States might view the recommendation that the CDM's institutional body should prescribe internationally agreed criteria for sustainable development as a threat to their sovereign right. It also raises the question how easy would it be to adopt and implement such criteria bearing in mind that generally, negotiations relating to climate change are always long drawn and States usually come to the negotiating table to protect their national interest. Furthermore, establishing criteria for sustainable development is made more difficult by the unsettled nature of sustainable development in international law. Despite these challenges, it is important to establish minimum standards and guidelines that will ensure the sustainable development objective of the CDM is achieved alongside its emission reduction objective.

As a result of the challenges discussed above, one possible solution could be to make the minimum standards and guidelines optional, thereby making it easy for Parties to accept it. However, this will not improve the CDM because it is likely that such optional standards and guidelines will suffer from the same fate of varying approval procedures and sustainability assessment highlighted earlier in this chapter. Therefore, the only option is to make the minimum standards and guidelines mandatory for project participants and host countries. Arguments about the sovereign right of States to define their sustainable development can be refuted with the argument that the CDM is a voluntary mechanism and as such, it should only be open to project participants and host countries that are willing to abide by its minimum standards and guidelines, in order to promote its dual objectives. According to Bodansky noted "it is hard to imagine how problems such as global climate change will be successfully addressed, without the eventual establishment of more authoritative international institutions to set standards and oversee compliance".[460] Furthermore, this will discourage some host

[460] D. Bodansky, 'The legitimacy of international governance: a coming challenge for international environmental law?' (1999) 93 *American Journal of International Law* (AJIL), 599.

countries' perception of the CDM as a source of foreign investment solely, to the detriment of pursuing sustainable development.

3.3.1 Can the Validation and Registration Requirements Foster Policy Reforms That Will Promote Sustainable Development in Developing Countries?

The desire to ensure effective implementation and governance of the CDM V & R requirements can act as a catalyst to prompt CDM host countries to establish rules, regulations, and infrastructures that will invariably foster policy reforms and development. For example, the World Bank requires that all projects funded by it should conduct an EIA. As a result of this stipulation, any country desirous of attracting funding from the World Bank to implement projects will, as of a necessity, conduct a comprehensive assessment of the environmental impacts of the proposed project. What this means is that this policy directive will not only ensure that host countries establish structures, policies and regulations for conducting EIAs, but it will also promote capacity building in environmental management in the host country.[461]

Furthermore, the host country regulatory and infrastructural framework will be enhanced, where compulsory minimum standards and guidelines are established. This is because the need to conform to the standards of the CDM will ensure that internationally acceptable standards, and framework, adopted by the host country becomes a normative standard in that host country.[462]

[461] S. Bell and D. McGillivary, *Environmental Law* (Oxford: Oxford University Press, 2008) 7th edn. 434.
[462] *Ibid*.

Although previous research studies assert that the CDM has remained ineffective in promoting sustainable development in CDM host countries,[463] this thesis advocates that the effective fulfilment and implementation of the V & R requirements can foster policy reforms and changes that will contribute to sustainable development in host countries. However, this can only be achieved if CDM host countries build upon the standards and guidelines provided by the CDM's governing body. It is important to concede at this point that the ability of the V & R requirements to foster policy reforms is hampered by issues mentioned earlier at the beginning of the chapter, such as state sovereignty, capacity building needs, political instability, local rules and regulations and more importantly, the willingness of developing countries to use the CDM as an avenue to drive their sustainable development goals, and not only an avenue to attract foreign investment. Ultimately, it is necessary to bear in mind that the CDM and the V & R requirements can only provide tools to foster policy development and reforms in developing countries but it cannot solve fundamental issues and challenges that are unique to developing countries.

3.4 Conclusion

This chapter concludes that the V & R requirements for CDM projects, especially those V & R requirements that are regarded as tools for promoting sustainable development, are not suitable to promote sustainable development in CDM host countries. With regards to the analysis of the CDM PS and the VVS, It is commendable that the CDM PS has introduced further clarifications for the fulfilment of the V & R requirements. However, this does not go far enough to prescribe the minimum standards and guidelines necessary for fulfilling and implementing those V & R requirements in a way that will promote sustainable development.

[463] See Chapter 1.

Furthermore, some of the other V & R requirements remain unchanged and, overall, the CDM PS and the VVS do not provide the minimum standards and guidelines required to ensure their fulfilment and implementation promotes sustainable development.

It is evident from the analysis of the V & R requirements that the governance of the CDM has a stronger focus on the cost-effective emission reduction objective of the CDM than it's sustainable development objective. This thesis assumes that because of the challenges of sovereignty of States, the CDM's governing structure has devolved the governance of the sustainable development aspect of the CDM to host countries rather than prescribe minimum standards. Therefore, the onus is on the CDM host country to ensure that CDM projects, apart from fulfilling the cost-effective emission reduction objective of the CDM, also promote their sustainable development. However, as is shown in subsequent chapters, CDM host countries are often unwilling[464] or unable[465] to ensure that proposed projects contribute to their sustainable development priorities. This may be due to issues such as lack of capacity and expertise to implement CDM projects, the absence of national framework to govern the CDM process, the interests of host country to secure as many CDM projects as possible because of the investment they bring, little incentive to require strong sustainability criteria that could dampen investment, lack of infrastructure within CDM host countries, political instability, and the need to address urgent national issues such as poverty alleviation.

The next chapter examines the institutional structure of the CDM. It examines how the institutional bodies supervise the CDM, focusing in particular on their functions in relation to

[464] See Chapter 5.
[465] There are resources available to CDM host countries that require capacity building in ensuring that CDM projects contribute to sustainable development in host countries.

the supervision, (of the fulfilment and the implementation),[466] of the V & R requirements for CDM projects.

[466] The V & R requirements are fulfilled by project participants and implemented by the DOE and the DNA.

CHAPTER FOUR

CDM GOVERNANCE STRUCTURE

4.1 Introduction: Governing the CDM

Chapter 2 established that governance is a critical tool for advancing sustainable development at all levels.[467] Chapter 3 concluded that the CDM rules and the CDM PS and VVS do not provide the minimum standards and guidelines required to ensure that the fulfilment and implementation of the V & R requirements that are regarded as tools for promoting sustainable development promotes sustainable development. This chapter aims to determine whether the CDM's institutional bodies can effectively supervise and implement the CDM V & R requirements and whether they can, through this supervision, promote sustainable development in CDM host countries. Thus, the aim of this chapter is to answer the second sub-research question - do the rules confer sufficient authority on the CDM's institutional bodies to effectively implement and supervise the V & R requirements?[468] An addendum, based on the analysis of the CDM VVS and its additional clarification to DOEs will be included in this chapter.

To do this, this chapter examines the functions of these bodies, as provided for in the CDM rules). Specifically, it analyses if these functions include supervision of the V & R requirements, particularly those that should promote sustainable development in developing countries. This chapter also assesses the extent to which the CDM's institutional bodies can

[467] The institutional structure of the CDM (national and international) is central to the delivery of sustainable development in the CDM. H. Bulkeley and P. Newell, *Governing Climate Change*, 13. See also K. Bäckstrand, 'Accountability of networked climate governance: The rise of transnational climate partnerships' (2008) 8(3) *Global Environmental Politics* 74 at pg. 75; and A. Markandya and K. Halsnaes, 'Climate change and sustainable development: an overview' in A. Markandya and K. Halsnaes, (eds.), *Climate Change & Sustainable Development: Prospects for Developing Countries* (London: Earthscan Publications Limited, 2002), 1 at pg. 2.

[468] Recall that one of the main research questions is: How are the V & R requirements for CDM projects fulfilled, supervised and implemented in practice?

effectively carry out their supervisory functions and whether such supervision is well-suited and effective to promote the sustainable development objective of the CDM. Finally, this chapter considers whether the CDM's institutional body, specifically the COP/MOP and the EB, have the authority to prescribe minimum standards to project participants and host countries, for the fulfilment of the V & R requirements that are tools for prompting sustainable development. This is particularly important because as noted in Chapter 3, the CDM's institutional body is reluctant to prescribe guidance and minimum standards for the fulfilment of those V & R requirements that will promote sustainable development in CDM host countries.

The CDM's institutional structure comprises the COP/MOP, the EB and its panels and working groups, DOEs and the UNFCCC Secretariat. In addition to these international bodies, DNAs are also part of the governance structure of the CDM because they are directly responsible for implementing the V & R requirements at the national level. Therefore, the V & R requirements can be loosely classified into international requirements that are supervised by the CDM's institutional structure and national requirements that are implemented by the host country. Table 4.1 below provides a snapshot of the CDM's institutional structure. Note that this chapter will only examine and analyse CDM actors that are directly involved in the supervision of the V & R requirements, such as the EB and its Registration and Issuance team (RIT), UNFCCC Secretariat, DOEs and DNAs. In addition, this chapter will briefly examine and analyse the functions and the role of the COP/MOP, although they not directly involved in the supervision of the CDM, they are involved in the formulation of the rules governing the CDM.

4.2 The Institutional Structure of the CDM

Evaluating the institutional structure[469] of the CDM is critical to assessing the extent to which the CDM is likely to contribute to sustainable development in CDM host countries.[470] This is because the institutional structure of the CDM is crucial for implementing policies, establishing procedures, approving projects, monitoring and certifying emission reductions.[471] Furthermore, the institutional structure of the CDM is central to ensuring that the CDM achieves it dual objectives.

Table 4.1: Overview of the CDM Institutions

Body/Institution	Composition	Role	Decision-making
COP/MOP	1. All Parties to the KP. 2. Convenes annually.	1. The governing body of the KP and the ultimate authority over the CDM. 2. Approves the recommendations made by the EB. 3. Designates operational entities that are accredited by the EB.	Makes decisions for the effective implementation of the KP, including the CDM.
Executive Board (EB)	10 members and 10 alternate members elected by the COP/MOP.	1. Supervises the CDM under the authority and guidance of the COP/MOP. 2. Approves and registers CDM projects. 3. Approves baselines and monitoring methodologies. 4. Reviews small-scale project procedures. 5. Issues CERs. 6. Accredits DOEs. 7. Interprets the decisions of the COP/MOP	Prepares technical and decision papers for review and adoption by the COP/MOP.
Panels	1. Technical experts nominated by the EB.	The panels assist the EB in the execution of its tasks. 1. CDM-AP: Supports the EB in the accreditation of DOEs.	1. The expert panels do not make decisions. 2. They undertake

[469] Ganapati and Liu define institutional structure as the "manifest arrangement of relationships between government and non-government organisations for implementing CDM projects." S. Ganapati and L. Liu 'Sustainable development in the Clean Development Mechanism: the role of Designated National Authority in China and India' (2009) 52(1) *Journal of Environmental Planning and Management* 43 at pg. 47. This thesis adopts this definition.

[470] P. Newell *et al.,* 'Governing Clean Development: a framework for analysis' (2009*)* 27(6) *Development Policy Review* 717 – 739.

[471] D. Feaver and N. Durrant, 'A regulatory analysis of international climate change regulation' (2008) 30(4) *Law & Policy* 394 at pg. 395.

	2. There are 3 panels: the Accreditation Panel (CDM-AP); the Methodologies Panel (Meth Panel); and the Small-Scale Panel (SSC Panel).	2. Meth Panel: develops guidelines for baseline calculations and monitoring methodologies. 2a. Reviews new baseline and monitoring methodologies. 3. SSC Panel: makes recommendations on simplified modalities and procedures for small-scale CDM projects.	technical assessments and make recommendations to the EB.
Working Groups	1. Technical experts nominated by the EB 2. The EB has established two groups: The Afforestation and Reforestation Working Group (A/R WG); and the Small-Scale Working Group (SSC-WG)	1. Act as consultative bodies to the EB 2. Review submissions from stakeholders 3. Undertake technical assessments	Same as above
Review and Issuance Team (RIT)	1. Experts nominated by the EB	The RIT assists the EB and: 1. Considers requests for registration of CDM projects 2. Considers requests for issuance of CERs submitted to the EB 3. Makes recommendations to the EB on CDM projects that require review 4. Makes recommendations to the EB on requests for issuance of CERs that require review	Same as above
DOE	1. Private companies accredited by the EB and designated by the COP/MOP	1. Validates proposed CDM projects on behalf of the EB 2. Verifies and certifies emission reductions achieved by registered CDM projects	None
UNFCCC Secretariat	UN professional staff	The Secretariat directly and indirectly supports and links the various actors participating in the CDM. The Secretariat: 1. Prepares minutes of meetings. 2. Drafts decisions and guidelines 3. Reviews some of the documentation submitted by project participants, such as the	None

		project design documents	
DNAs	1. An administrative unit of the host country 2. Usually located within the host country's ministry of environment or energy	1. Approves CDM projects 2. Confirms that projects are voluntary and assist the host country in achieving sustainable development 3. Influences CDM policies within the participating country	None

Adapted from C. Streck, 'The governance of the Clean Development Mechanism: the case for strength and stability'[472]

4.2.1 The Conference of the Parties serving as the Meeting of the Parties to the Protocol (COP/MOP)

The Conference of the Parties (COP) refers to the Parties to the UNFCCC[473] and the Meeting of the Parties (MOP) refers to the Parties to the KP. The Conference of the Parties serves as the Meeting of the Parties, and when this occurs it is known as the COP/MOP.[474] The COP/MOP has authority over, and provides guidance to the EB in its supervision of the CDM.[475] Therefore, the EB supervises the CDM under the authority and guidance of the COP/MOP.

(a) Composition of the COP/MOP

The COP/MOP is composed of all Parties to the UNFCCC that are also Parties to the KP.[476]

[472]C. Streck, 'The governance of the Clean Development Mechanism: the case for strength and stability' (2007) 2 *Environmental Liability* 91 at pg. 93.
[473] United Nations Framework Convention on Climate Change (UNFCCC) (New York) 9 May 1992, in force 24 March, 1994. Reprinted in (1992) 31 ILM 849.
[474]See Article 13 of the KP. This structure is intended to reduce costs and streamline management of the UNFCCC and the KP processes. See CDM Rulebook, 'Conference of the Parties serving as the Meeting of the Parties' (COP/MOP) www.cdmrulebook.org/pageid/438 (CDM Rulebook Website, 14/2/201).
[475] Decision 3/CMP.1, Annex, Paragraphs 2 and 3. Also see Article 12(4) KP.
[476] Article 13(1) KP. Also see: Decision 3/CMP.1, Annex Paragraph 2; and Section 3.2.1(c) of Chapter 3, on the ratification of the KP.

(b) Characteristics of the COP/MOP

The COP/MOP meets annually. The meeting of the COP/MOP is open to all Parties to the UNFCCC that are also Parties to the KP. The meeting is also open to observers; these are Parties to the UNFCCC that are not Parties to the KP. However, decisions under the KP can only be taken by Parties to the Protocol.[477]

(c) Functions of the COP/MOP

In general, the COP/MOP regularly reviews the implementation of the KP and takes decisions necessary to ensure the effective implementation of the Protocol,[478] such as establishing subsidiary bodies that it deems necessary for effective implementation.[479] The CDM rules also state the functions of the COP/MOP in relation to the CDM. These functions include taking decisions on the EB's recommendations, such as on the EB's rules of procedure,[480] designating DOEs based on the accreditation of private entities by the EB and the accreditation standards contained in Appendix A of the CDM rules,[481] and reviewing the annual reports of the EB, as well as the regional and sub-regional distribution of DOEs and CDM projects.[482] The COP/MOP does this review to promote the accreditation and designation of private entities from developing countries as DOEs and to ensure that there is an equitable distribution of CDM projects.

With regard to the V & R requirements, which are the focus of this thesis, the COP/MOP is responsible for providing the rules governing the CDM, which contains the V & R requirements.[483] Decision 3/CMP.1, which contains most of the V & R requirements, is a

[477] Article 13(2) and (6) KP.
[478] Article 13(4) (a - j) Ibid.
[479] Article 13(4) (h) Ibid.
[480] Decision 3/CMP.1, Annex, Paragraphs 3(a) and (b).
[481] Ibid. Annex, Paragraph 3(c).
[482] Ibid. Annex, Paragraphs 4(a), (b) and (c).
[483] Recall that the COP/MOP has the general mandate to review the implementation of the KP and takes decisions necessary to ensure the effective implementation of the Protocol.

decision of the COP/MOP. However, it does not have specific functions with regard to their implementation and supervision. The COP/MOP provides general policy guidance regarding the CDM, but the EB and the other institutional bodies, such as the DOEs, are the ones that are generally required to implement and supervise these decisions. Consequently, the functions of the COP/MOP will not be further examined, as the COP/MOP is not directly involved in supervising the fulfilment of the V & R requirements.

4.2.2 The Executive Board (EB)

The KP established the EB as a governing body to supervise the implementation of the CDM.[484] Similarly, the CDM rules provide the EB with the mandate to supervise the CDM, whilst remaining fully accountable to the COP/MOP.[485] In addition to the general supervisory role provided in the KP, the CDM rules provide additional rules relating to the EB's functions, membership and rules of procedure.[486]

(a) Composition of the EB

The EB is composed of 10 members and 10 alternate members appointed from Parties to the Protocol[487] and are formally elected by the COP/MOP.[488] They are elected for a term of two years and are eligible to serve a maximum of two consecutive terms.[489] The 10 members

[484] Article 12(4) of the KP. See also UNEP Risoe Centre and Baker and McKenzie, *Legal Issues Guidebook to the Clean Development Mechanism* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2004), 22.
[485] Decision 3/CMP.1, Annex, Paragraph 5.
[486] *Ibid*. Annex, Paragraph 5(a-p).
[487] *Ibid*. Annex, Paragraph 7.
[488] *Ibid.* Annex, Paragraph 8(b).
[489] *Ibid*. Annex, Paragraph 8(b). The current members of the EB are M. Duan (Chair, China), M. Hession (Vice Chair, United Kingdom), Mr M. Cames (Germany), D. Harutunyan (Armenia), A. Huerta-Goldman (Mexico), V. Wa Kadilu (Congo), K. Kainou (Japan), S. Kakakhel (Pakistan), J. Miguez (Brazil), and H. Sealy (Barbados/Canada) http://cdm.unfccc.int/EB/index.html ('The composition of the CDM executive Board for 2012' UNFCCC Website, 30/7/2012).

consist of one member from each of the five UN regional groups,[490] two members from Annex I Parties; two members from non-Annex I Parties; and one representative of the small island developing States.[491]

(b) Characteristics of the EB

(i) Environmental Integrity and Impartiality: the integrity of the CDM and its governing body is essential to its success and acceptance; therefore, the CDM rules prohibit EB members from having pecuniary or financial interest in CDM projects.[492] EB members are also prohibited from having pecuniary or financial interest in DOE organisations.[493] At the start of each meeting, members of the EB must confirm that in carrying out their duties, they are not influenced nor have any interest in any CDM project or DOE, and objections regarding this confirmation can be made by stakeholders, including private or public entities.[494] Furthermore, once elected, EB members act in their personal capacity and do not represent their individual countries when serving as members of the Board.[495] Therefore, when performing their role, EB members are not acting as government officials and would therefore not be entitled to any privileges and immunities as representatives of their countries.[496]

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[490] The five regional groups are: African States; Asian States; Eastern European States; Latin American and Caribbean States; and Western European and Other States.
[491] Decision 3/CMP.1, Annex, Paragraph 7.
[492] Decision 4/CMP.1, Guidance relating to the clean development mechanism (FCCC/KP/CMP/2005/8/Add.1, 30 March 2006), Annex III, hereinafter referred to as Decision 4/CMP.1, See Annex, Paragraph 8(f).
[493] *Ibid*.
[494] The EB usually considers request for registration of CDM projects at its meetings and one of the items on the agenda is usually a consideration of possible conflict of interest situations. For instance see the Report of EB 66 meeting at http://cdm.unfccc.int/Meetings/MeetingInfo/DB/1J8ZD94N7SROT03/CoIIndex (UNFCCC Website, 28/1/2012). Also see EB-65, Declaration of Conflict of Interest. Available at http://cdm.unfccc.int/Meetings/MeetingInfo/DB/OIWCL6FD3J9HV5E/CoIIndex (UNFCCC Website, 5/5/2012)
[495] Decision 3/CMP.1, Annex, Paragraph 8(c).
[496] Baker and McKenzie, 'Powers of the COP/MOP and Executive Board in respect of the CDM' (2005), 16. Legal opinion prepared for the International Emissions Trading Association (IETA). http://www.ieta.org/ieta/www/pages/getfile.php?docID=1241 (IETA Website, 22/11/ 2010).

However, in spite of the safeguards built into the CDM rules to prevent conflict of interest of a financial, political or personal nature, EB members may, nevertheless, be faced with conflict of interest situations when carrying out their duties. This is because EB members, while serving as members of the Board, may also serve concurrently as negotiators for their country during climate change negotiations and may also represent their DNA.[497] For instance, in a study by Streck and Lin which compared the list of EB members and the representatives of country DNAs in 2007, they noted that there were possible conflict of interest situations arising as a result of overlap in responsibility of EB members and their responsibilities to their national DNA office.[498] According to them, apart from serving as EB members, some of the EB members also represent their national DNA office in all aspects of the CDM, from the purchase of CERs, to the sale of CERs.[499]

A look through the current list of EB members indicates, for instance, that the current vice chair of the EB, Martin Niall Hession, also works for the UK DNA- he is responsible for management and advice on UK project assessment and approval.[500] The Chair of the EB, Maosheng Duan, acts as an advisor to the Chinese DNA as well as being a member of the EB.[501] A recent empirical study of the EB's decision-making process examined, among other issues, the role and influence of EB members' nationality on the recommendations and decisions of the EB to register CDM projects, and the relevance of political-economic versus

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[497] *Ibid*.
[498] C. Streck and J. Lin, 'Making markets work: a review of CDM performance and the need for reform' (2008) 19(2) *EJIL* 409 at pg. 424. See also J. Sepibus, 'The environmental integrity of the CDM mechanism – a legal analysis of its institutional and procedural shortcomings' (2009) Swiss National Centre of Competence in Research (NCCR) Working Paper No 2009/24, 17. http://82.220.2.60/images/stories/research/header_ip6/environmental%20integrity%20CDM.pdf (NCCR Website, 10 March, 2011).
[499] C. Streck and J. Lin, (2008), 424.
[500] See http://cdm.unfccc.int/EB/Members/files/bio_hession.pdf. ('Composition of the CDM Executive Board for 2011' UNFCCC Website, 10/06/ 2011). This information was correct as of August, 2011.
[501] See http://cdm.unfccc.int/EB/Members/files/bio_duan.pdf ('Composition of the CDM Executive Board for 2011' UNFCCC Website, 10/06/ 2011). This information was correct as of August, 2011.

technical determinants of EB decision making.[502] The study concluded that countries with representation on the EB board have a higher chance of swaying decisions in favour of their national governments and private investors.[503]

(ii) Non-Binding Decisions: The decisions of the EB are not formally binding on Parties and other entities that participate in the CDM. However, it is generally accepted by Parties and entities participating in the CDM that the decisions of the EB are *de facto* binding on them.[504] Therefore the validity of the EB's decisions is based on the acceptance and submission by Parties and entities to them.[505] This is discussed in greater detail in Section 4.3 below

(iii) Relevant Expertise: EB members must possess appropriate technical and/or policy expertise to serve on the Board.[506] However, because of the increasing number of technical and methodological issues that arise from CDM projects, these issues are sometimes beyond the expertise of EB members.[507] For that reason, the CDM rules allow the EB to establish expert panels and working groups to assist it in supervising the CDM. This chapter discusses some of these expert groups and committees in Section 4.2.3 below.

(c) Functions of the EB

(i) Makes Recommendation to the COP/MOP

[502] F. Flues *et al*., 'What determines UN approval of greenhouse gas emission reduction projects in developing countries?' (2009) 145 (1-2) *Public Choice* 1 at pg. 2. The study is based on nearly 1000 projects and 250 methodologies discussed by the EB up to October 2007.
[503] *Ibid* at 5.
[504] C. Streck and J. Lin, (2008), 417.
[505] *Ibid*.
[506] Decision 3/CMP.1, Annex, Paragraph 8(c).
[507] C. Streck, (2007), 97. Streck notes that although EB members are usually qualified to exercise an oversight function on the CDM, they are however inundated with various technical details.

The EB makes recommendations to the COP/MOP on further modalities and procedures for the CDM and on any amendments or additions to the rules of procedure for the EB.[508] For instance, the EB is in charge of methodologies for the CDM, it approves new methodologies, including baseline and monitoring methodologies, to ensure that GHG reductions are real, measurable and additional.[509] The EB is also responsible for the accreditation of operational entities and makes recommendations to the COP/MOP for the designation of these operational entities as DOEs.[510] This also includes responsibility to re-accredit, suspend and withdraw the accreditation of operational entities.[511]

(ii) Registration and Review of Proposed CDM Projects

The EB is responsible for registering proposed CDM projects. The DOE submits a request for registration to the EB, together with the validation report, the PDD, and the LoA of relevant Parties.[512] The registration of the proposed CDM project is automatic eight weeks after the DOE submits the request for registration.[513] However, if a Party involved in the project or at least three members of the EB express concerns, then the project enters a review phase.[514] A proposed project is reviewed, for example, because of issues relating to the V & R requirements[515] and the EB must complete its review within 30 days.[516]

(iii) General Functions Linked to the V & R Requirements

[508] Decision 3/CMP.1, Annex, Paragraphs (5) (a) and (b).
[509] *Ibid.* Annex, Paragraphs (5) (d) and (e).
[510] *Ibid.* Annex Paragraph (5) (f).
[511] *Ibid.* Annex Paragraph (5) (f) (i).
[512] *Ibid.* Annex, Paragraph 40(f).
[513] *Ibid.* Annex, Paragraph 41.
[514] *Ibid.* Annex, Paragraph 41.
[515] *Ibid.* Annex, Paragraphs 41 and 42. See also: Decision 4/CMP.1, Guidance relating to the clean development mechanism (FCCC/KP/CMP/2005/8/Add.1, 30 March 2006), Annex III, hereinafter referred to as Decision 4/CMP.1; and for instance, see the Report of the 55th Meeting of the EB, 30 July 2010, CDM-EB-55. http://cdm.unfccc.int/filestorage/J/T/V/JTV1YA8FCHR4W2GMEOQ53SK60P9DLX/eb55_rep.pdf?t=b2F8MTMwNDY4NjY3Mi41OQ==|9RgeSQJsjUPa_e5Wd2_E7EXNjHs= (UNFCCC Website, 6/5/2011).
[516] See Decision 4/CMP.1, Annex III for the procedure for review of proposed CDM projects.

In addition to these specific functions, the EB also has general functions linked to the V & R requirements. The CDM rules provide that the EB shall make recommendations to the COP/MOP on further modalities and procedures for the CDM,[517] the approval of new methodologies for establishing baselines, monitoring plans and project boundaries.[518] These functions of the EB in relation to the V & R requirements for the CDM, as well as its overall functions to supervise the CDM are analysed below.

Analysis of the Role and Performance of the EB[519]

The COP/MOP provides general policy guidance on the governance of the CDM while the EB translates this general policy guidance into specific guidance at project level. However, in translating this general policy guidance, its decisions on the CDM must be consistent with provisions of the KP, the CDM rules, and general principles of international law.[520]

The main role of the EB is to supervise the CDM.[521] The supervisory role of the EB includes, *inter alia,* recommending further modalities for the CDM to the COP/MOP, approving new methodologies relating to, *inter alia*, baselines, and monitoring plans, accrediting operational entities and addressing issues relating to observance of modalities and procedures for the CDM by project participants and/or DNA and report on them to the COP/MOP.[522] In addition to these, Decision 4/CMP.1 provides the procedure for review of a proposed CDM project[523] and the EB supervises the process. The request for review of the decision to register a

[517] Decision 3/CMP.1, Annex Paragraph 5 (a).
[518] Ibid. Annex, Paragraph 5(d).
[519] Note that the analysis herein will be based on the EB's role to supervise the fulfilment of the V & R requirements and its role to supervise the CDM generally.
[520] Baker and McKenzie, 'Powers of the COP/MOP and Executive Board in respect of the CDM' (2005), 3.
[521] CDM rules, Paragraph 5. Paragraph 5(a) – (p) list the duties of the EB.
[522] CDM rules, Paragraphs 5(a), 5(d) 5(f) and 5(n) respectively.
[523] Recall that Paragraph 41 of the CDM rules provides that the registration of a proposed project by the EB shall be deemed final eight weeks after the date of receipt by the EB of the request for registration, unless a Party involved in the project activity or at least three members of the Executive Board request a review of the proposed CDM project. Decision 4/CMP. I provide the rules of procedure for the EB.

proposed CDM project must be related to issues associated with the validation requirements.[524] The duties of the EB can be categorised into regulatory and administrative functions in the governance of the CDM. Its administrative function includes providing the COP/MOP with a report of its meetings while its regulatory function includes approving new methodologies relating to, inter alia, baselines, monitoring plans and project boundaries.

In addition, the EB exercises supervisory role in relation to the V & R requirements. For instance, Paragraph 5(n) states that the EB should address issues relating to observance of modalities and procedures for the CDM by project participants and/or operational entities, and report on them to the COP/MOP.[525] Although on the face of it, it appears as though the EB has the authority to ensure the effective fulfilment and implementation of the V & R requirements by project participants and the host country, including those that would promote sustainable development in CDM host countries, however, a closer look at the regulatory functions of the EB and the V & R requirements indicate that the EB only has direct control and oversight over those V & R requirements that are relevant for fulfilling the emission reduction objective of the CDM.[526] This is because the EB has guidelines and minimum standards for fulfilling those requirements that are related to the emission reduction objective of the CDM, for example, the requirement for additionality and baseline and monitoring methodology. Furthermore, although the CDM rules provide that the EB should address issues relating to the fulfilment of the modalities and procedures for the CDM by project participants and/or DOEs, but in common with many of the provisions relating to the governance of the CDM in the CDM rules, this provision is very broad and vague. The EB's duty, to ensure that the modalities and procedures for the CDM are observed by project

[524] CDM rules, Paragraph 41(a).
[525] Also see Paragraph 5(d), 5(e) and 5(j).
[526] See CDM rules Paragraphs 5(d), 5(j) and (k).

participants and DOEs, does not stipulate how it should do this. Therefore, for requirements that are fulfilled and implemented by the host country, such as stakeholder participation and EIA, the EB does not appear to have the authority to question how the host country has implemented them or how the project participants have fulfilled them. However, for requirements, which are classified as international in this chapter and which are not relevant to sustainable development in the host country, there are detailed rules for their fulfilment, such as additionality and baseline and monitoring requirement.

As such, it is not feasible for the EB to supervise either the fulfilment or the implementation of those V & R requirements that will promote sustainable development since the manner of the fulfilment and the implementation of those requirements depend on standards in CDM host countries. Therefore, the current role of the EB, in ensuring that those V & R requirements are fulfilled and implemented in a manner that will promote sustainable development, is restricted to ensuring, through a checklist that those requirements are fulfilled in CDM host countries by project participants. Furthermore, as highlighted in Chapter 3, because the CDM rules and the EB did not provide minimum standards and guidelines for fulfilling those requirements, but leaves it up to the host country to determine, the EB cannot, rightly, review how these requirements have been fulfilled and implemented. Finally, the EB cannot supervise the fulfilment of the V & R requirements because the DOE validates projects on the basis of voluntary participation of Parties, additionality of project, and long term benefits to climate change only and the decision of the EB to register a project is based on the validation report of the DOE and nothing else. As a result, the EB cannot go outside the terms of the DOE's validation report.[527] Therefore, the EB does not appear to

[527] See further discussion in Section 4.2.5 *infra, on* the analysis of the role of the DOE.

have the authority to question how the host country has implemented V & R requirements or how the project participants have fulfilled them.

Ideally, to promote sustainable development, the role of the EB should extend to translating general policy guidance into specific guidance at project level and guiding host countries in the effective implementation of those requirements. However the power to do this is limited by various issues such as the sovereign rights of nations and the acceptance of those standards and guidelines by sovereign host countries.[528] According to Cruickshank *et al*., "[t]he current governance of the global commons through the prism of national sovereignty remains one of the most fundamental obstacles to progress."[529]

The EB faces challenges, with regard to its general duty to supervise the CDM, which will likely affect the achievement of the dual objective of the CDM. For instance, the EB has been criticised by CDM participants for inconsistencies and unpredictability in its decisions and decision-making process.[530] Research studies have attributed the inconsistences and unpredictability to reasons such as the ambiguity of COP/MOP decisions,[531] rotation of the EB members which results in lack of institutional memory and therefore inconsistencies in

[528]See Section 4.3 infra for further discussion.
[529] E. Cruickshank *et al*., A *Pocket Guide to Sustainable Development Governance* (2nd Edn), 10. Available at http://www.stakeholderforum.org/fileadmin/files/PocketGuidetoSDGEdition2webfinal.pdf (Published online by the Commonwealth Secretariat, 2012, accessed on 4/4/2012). See also M Ivanova (2011). 'Global governance in the 21st Century: Rethinking the environmental pillar', 8 and 14. Stakeholder Forum, sdg2012 Programme, http://www.stakeholderforum.org/fileadmin/files/IEG%20Paper-Ivanova- (4/4/2012).
[530] L. Schneider, 'Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement', 23. Report prepared for WWF (2007) http://www.oeko.de/oekodoc/622/2007-162-en.pdf (Öko-Institut Website, 16/6/2011)23. See also: M. Krey and H. Santen, 'Trying to catch up with the Executive Board: regulatory decision-making and its impact on CDM performance' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and beyond,* 231-247.
[531] C. Streck, (2007), 97.

the EB decisions, the level of technical knowledge of members of the EB[532] and what Streck refers to as 'political interests' and 'horse-trading.'[533]

Furthermore, the EB has been criticised for its lack of precedent, due to the fact that it is not bound by its previous decisions. This lack of predictability and certainty is regarded as a major drawback for efficient CDM supervision and governance.[534] For instance, Krey and Santen in their assessment and analysis of CDM methodologies note that a majority of CDM methodologies have remained valid for less than a year and that two of the methodologies are currently in their ninth version.[535]

4.2.3 EB Panels and Working Groups

The CDM rules provide the EB with the mandate to establish committees, panels or working groups to assist it in the supervision of the CDM.[536] Therefore, to assist it in carrying out its supervision of the CDM, the EB established the: Methodologies Panel (Meth Panel); CDM RIT; Accreditation Panel (CDM-AP); the Afforestation and Reforestation Working Group (A/R WG); and the Small-Scale Working Group (SSC WG). While EB members may be qualified to exercise general oversight of the CDM, they are however overwhelmed with the technical details of various project classes.[537] Consequently, the EB depends on expert panels and working groups to assist it in fulfilling its functions and responsibilities under the CDM. The expert panels do not make decisions regarding the CDM; instead, they undertake

[532] *Ibid.*
[533] *Ibid.*
[534] M. Krey and H. Santen, 'Trying to catch up with the Executive Board: regulatory decision-making and its impact on CDM performance' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and beyond*, 231 at pg. 234.
[535] *Ibid*. at 235 -236. In their analysis, Krey and Santen noted that "40% of the versions were valid for less than 90 days and 20% valid for less than 2 months!"
[536] Decision 3/CMP.1, Annex, Paragraph 18.
[537] Streck, (2007), 97.

technical and expert assessments upon which the EB bases its decisions. In addition to these groups, the UNFCCC Secretariat acts as the administrative centre for the EB and the CDM.

The following section will discuss and analyse the functions and role of only those expert panels that have responsibilities to supervise the V & R requirements. Therefore, the functions and role of the RIT and the UNFCCC Secretariat will be discussed and analysed below. This section will not analyse the functions and the role of the Meth panel, CDM-AP, A/R WG, and SSC WG, as they are not involved in the supervision of the fulfillment of the V & R requirements.

(a) Registration and Issuance Team (RIT)

The RIT was established to assist the EB in its task of considering requests for registration of proposed projects that have been validated by DOEs, as well as requests for issuance of CERs submitted to the EB by DOEs.[538]

(b) Composition and Characteristics of the RIT

The RIT is composed of not less than 20 members.[539] Members of the team are selected by the EB based on a public call for experts posted on the UNFCCC website, and members are then selected from a shortlist compiled by the Secretariat.[540] The selection observes the principle of regional balance and relevant work experience.[541]

According to Krey and Santen, the RIT was set up in early 2006 as a second layer of independent assessment of CDM projects after criticism of the quality of the validation

[538] Terms of Reference and Procedure for a Registration and Issuance Team (RIT) (Version 5.1), Twenty-Ninth Meeting Report 14th -16th February 2007, Annex I4, Paragraph 1. Hereinafter referred to as CDM-EB-29 http://cdm.unfccc.int/EB/029/eb29_repan14.pdf. (UNFCCC Website, 17/5/2010).
[539] CDM-EB-29, Paragraph 7.
[540] *Ibid*. Paragraph 14.
[541] *Ibid*. Paragraph s 13 and 14.

reports and the DOEs.[542] RIT members are paid by the EB for the appraisal work they undertake on behalf of the EB.[543] The RIT operates under the guidance of the EB.[544] Experts appointed to the RIT are expected to possess, *inter alia*, relevant working experience, of at least four years on methodological issues and monitoring and verification experience related to project-based mechanisms.[545]

(c) Functions of the RIT

In carrying out its role, the RIT appraises the PDD and the supporting document of proposed CDM projects.[546] RIT members are required to declare any perceived conflict of interest in any of the case they assess and they are required to treat with strict confidentiality, any confidential information which they obtain in the process of work.[547] The terms of reference of the RIT provides that the appraisal should assess, in particular, the application of the baseline and monitoring methodology, additionality, and the determination of baseline in the proposed CDM project.[548] The RIT either recommends the project for registration or highlights issues that need further clarification to the EB, and the EB decides whether or not to request a review of the validated project.[549]

Analysis of the Role and Performance of the RIT

Unlike the COP/MOP and the EB, the terms of reference of the RIT are directly related to the supervision of the V & R requirements. Apart from appraising the request for registration and

[542] M. Krey and H. Santen, 'Trying to catch up with the Executive Board: regulatory decision-making and its impact on CDM performance' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and beyond*, (Oxford: Oxford University Press, 2009), 231 at pg. 234.
[543] CDM-EB-29, Paragraphs 18 and 19.
[544] *Ibid*. Paragraph 6.
[545] *Ibid*. Paragraph 13 (a) (b) (i) and (ii).
[546] Appraisal by the RIT is defined as "an appraisal of a request for registration or issuance; or (ii) an appraisal of inputs received in response to a request for review from the CDM Executive Board or a Party involved in the project activity." Ibid. footnote 3.
[547] *Ibid*. Paragraphs 12(a), (b) and (c).
[548] *Ibid.* Paragraph 23.
[549]See: L. Schneider *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, (Berlin: Öko-Institut, 2007), 22.

supporting documentation submitted by the DOE, the terms of reference of the RIT specify that in its appraisal, the RIT member should focus on only the application of the baseline and monitoring methodologies, additionality test and determination of baseline of the proposed CDM project.[550] These are V & R requirements that will enhance the achievement of the emission reduction objective of the CDM, but not the sustainable development objective. Therefore, the terms of reference of the RIT specifically do not require appraisal of the fulfilment of the V & R requirements that are regarded as tools for achieving sustainable development.

Another seemingly small, but crucial, weakness, of the RIT is the fact that its members work individually. RIT members do not work together and are in different locations.[551] Members are also most likely to have varied experience and qualifications,[552] which would likely result in a less coherent appraisal of registration requests overall.[553] The creation of the RIT has resulted in an increase in the scrutiny of projects and the weeding out of non-additional projects.[554]

4.2.4 The UNFCCC Secretariat

The climate change secretariat was established by the UNFCCC[555] to provide general secretarial functions for the convention and its Parties.

[550] CDM-EB-29, Paragraph 23.
[551] *Ibid.* Paragraph 14.
[552] Note that CDM-EB-29 Paragraph 13(d) provides that a member of the RIT shall have advanced university degree in economics, energy, social, environmental studies, natural sciences, engineering, development studies, or any related discipline.
[553] See: L. Schneider, *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 23. According to Schneider, CDM participants and stakeholders have criticised the quality of appraisal and assessment by RIT members for being varied.
[554] A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond* (Oxford: Oxford University Press, 2009), 248 at pg. 256.
[555] Article 8 UNFCCC.

(a) Composition and Characteristics of the UNFCCC Secretariat

The UNFCCC Secretariat is staffed by paid career staff with administrative functions. The Secretariat serves as the 'institutional memory' for the CDM;[556] it acts as the administrative centre for the CDM and provides administrative services to the COP/MOP, the EB and other CDM actors.[557] More importantly, the UNFCCC Secretariat supports and links all relevant actors in the CDM by providing a means for them to co-ordinate their activities and functions in a cost-efficient manner.[558]

(b) Functions of the UNFCCC Secretariat

The CDM rules provide that the Secretariat shall service the EB.[559] To do this, the UNFCCC Secretariat receives, reproduces and distributes to EB members and alternate members, the minutes of EB meetings.[560] It translates the EB's decisions into all six official languages of the UN and makes those decisions publicly available.[561] Furthermore, the UNFCCC Secretariat assists the EB in keeping and maintaining relevant CDM information, and also performs any other function that the EB may require.[562]

In addition to its administrative duties, the EB, in 2007, made further changes to the procedure for the appraisal of request for registration for proposed CDM projects. Under these changes, in addition to the RIT's appraisal of registration request, the UNFCCC Secretariat conducts a 'completeness-check,' upon the receipt of a request for registration of a

[556] C. Streck and J. Lin, (2008), 418.
[557] M. Netto and K. Schmidt, 'The CDM project cycle and the role of the UNFCCC Secretariat' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and beyond (*Oxford: Oxford University Press, 2009), 213 at pg. 220. Also see Streck and Lin, (2008), 418.
[558] M. Netto and K. Schmidt, 'The CDM project cycle and the role of the UNFCCC Secretariat' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and beyond*, 220.
[559] Decision 3/CMP.1, Annex, Paragraph 19.
[560] *Ibid.* Annex VIII, Rule 36(a).
[561] *Ibid*. Annex VIII, Rule 36(b).
[562] *Ibid*. Annex VIII, Rule 36(c) and (d).

proposed CDM project.[563] The 'completeness-check' is a further examination by UNFCCC Secretariat to ensure that all necessary documents have been submitted and the registration fees have been paid.[564] The documents required to conduct the completeness check are the: PDD; validation report of the DOE; LoA from all Parties involved in the proposed CDM project; letter of voluntary participation from the DNA of each of the project participants; modalities of communication form; and registration request form.[565]

Furthermore, the guideline reaffirms that all information relating to the demonstration of additionality, and determination of the baseline requirements, should be presented in a transparent manner in the PDD.[566] In addition, the UNFCCC Secretariat is required to ensure that the version of methodology applied by the project participants is valid, at the point of submission and request for registration.[567] The UNFCCC Secretariat thereafter makes a recommendation to the EB for registration of the project or highlights issues that need to be addressed by the DOE before the project can be registered.[568]

Analysis of the Role and Performance of the UNFCCC Secretariat

Similar to the appraisal process for requests for registration conducted by the RIT, the UNFCCC Secretariat is only required to check those V & R requirements that are relevant for the emission reduction objective of the CDM. For instance, the UNFCCC Secretariat is required to check that all information relating to the demonstration of additionality, and determination of the baseline requirements are presented in a transparent manner in the

[563] CDM-EB-48 Annex 60, Guidelines on Completeness Check of Requests for Registration. Hereinafter referred to as CDM-EB-48 Annex 60. See Annex 60 Paragraph 1.
[564] *Ibid.* Paragraph 7 (a) (b) and (c). Also see: M. Krey and H. Santen, 'Trying to catch up with the Executive Board: regulatory decision-making and its impact on CDM performance' in D. Freestone and C Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 231 at pg. 239.
[565] CDM-EB-48 Annex 60, Paragraph 8 (a-f).
[566] Ibid. Paragraph 9(b).
[567] Ibid. Paragraph 9(f).
[568] Ibid. Paragraph 12. See also: L. Schneider *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 22.

PDD.[569] The 'completeness check' does not include an assessment or appraisal of the effective fulfilment of the stakeholder participation process, EIA and the sustainable development contributions of proposed CDM projects. The UNFCCC Secretariat is only required to check that those requirements have been fulfilled, not *how* they were fulfilled. However, the appraisal of registration request by RIT members and the 'completeness-check' conducted by the UNFCCC Secretariat have led to an increase in the number of rejected and reviewed projects.[570] Schneider notes that the EB has largely delegated the technical assessment of projects to the RIT and the UNFCCC Secretariat, and that the EB only reviews projects where the RIT or the UNFCCC secretariat raises issues of concern or further consideration by the EB.[571]

4.2.5: Designated Operational Entities (DOEs)

DOEs validate proposed CDM projects on the basis that project participants are participating voluntarily without coercion, emission reduction is additional to any that would have occurred in the absence of the proposed project, the project results in real, measurable and long-term benefits related to the mitigation of climate change,[572] and all the V & R requirements related to sustainable development.

[569] CDM-EB-48 Annex 60, Paragraph 9(b).
[570] L. Schneider, *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 23.
[571] *Ibid.*
[572] Article 12(5) (a-c) KP.

(a) Composition of DOEs

There are currently 41 entities accredited by the EB and designated as operational entities by the COP/MOP.[573] DOEs are usually private consultancy firms or certification companies providing CDM validation and certification services.

(b) Characteristics of DOEs

The EB accredits DOEs according to the accreditation standards contained in Appendix A of the CDM rules. Upon accreditation, the EB makes a recommendation to the COP/MOP that the entity be designated as an operational entity.[574] Although DOEs are paid by the project participants for their validation, verification and certification services, the DOE acts as an agent of the EB,[575] it is accountable to the COP/MOP through the EB and is bound to observe all CDM rules and relevant decisions of the COP/MOP and EB.[576]

To safeguard the environmental integrity of the CDM, DOEs must demonstrate that they or their sub-contractors have no real or potential conflicts of interest with the project participants.[577] Furthermore, to address the possible conflict of interest situation that may arise as a result of the fact that project participants pay the DOE to act as agents of the EB, the EB may do the following: conduct spot-checks of DOEs at any time; ensure that DOEs are in compliance with the accreditation standards; and recommend to the COP/MOP to withdraw or suspend the accreditation of a DOE, if it no longer meets the accreditation standards.[578]

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[573] See the UNFCCC website for a list of all the DOEs. http://cdm.unfccc.int/DOE/list/index.html (UNFCCC Website, 20/4/ 2012). Also see Decision 3/CMP.1, Annex, Paragraph 3(c).

[574] Decision 3/CMP.1, Annex, Paragraph 5(f). See also Appendix A for the accreditation standards for designating DOEs.

[575] Schneider refers to the DOE as an 'extended arm' of the EB. See L. Schneider, *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 5.

[576] Decision 3/CMP.1, Annex, Paragraph 26.

[577] *Ibid.* Paragraph 27(d).

[578] *Ibid*. Paragraph 21. Appendix A of Decision 3/CMP.1 contains the accreditation standard required of DOEs.

(c) Functions of DOEs

DOEs operate under contractual agreements with project participants to validate and confirm that proposed projects satisfy the V & R requirements.[579] In validating proposed CDM projects, DOEs are also required to ensure that they comply with applicable laws of the CDM host countries.[580]

The CDM Manual provides that DOEs shall be guided by the following terms when validating and verifying information provided by project participants: accuracy of quantitative and non-quantitative data;[581] conservative information that is not overestimated;[582] relevant information that ensures compliance with the CDM requirements;[583] credible information that is authentic and able to inspire belief or trust,[584] reliable information, such that the quality of evidence is accurate and credible and able to yield the same results on a repeated basis;[585] completeness of validation, such that all relevant information for assessment of GHG emission reductions and the information supporting the methods applied are included in the validation report;[586] and a validation opinion that provides confirmation of GHG emission reductions or removal by a proposed CDM project.[587] In addition to the terms for validation, the CDM Manual provide that DOEs shall

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These include *inter alia*: being a legal entity; employ a sufficient number of persons having the necessary competence to perform validation, verification and certification functions; and having the financial stability, insurance coverage and resources required for its validation activities. Also see (d) *infra* for an analysis of the role of the DOE.

[579] *Ibid*. Paragraphs 26 and 27(a) and (b). Also see Paragraph 37(a-g) and Paragraph 40(a) for the V & R requirements.

[580] Decision 3/CMP.1, Annex, Paragraphs 27(c).

[581] EB 55 Annex 1, Paragraph 7 (a) and (b).

[582] *Ibid.* Paragraph 8.

[583] *Ibid*. Paragraph 9.

[584] *Ibid*. Paragraph 10.

[585] *Ibid.* Paragraph 11.

[586] *Ibid*. Paragraph 12.

[587] *Ibid*. Paragraph 13.

be guided by the principles of consistency, transparency, impartiality, independence and safeguarding against conflicts of interest, and confidentiality.[588]

Analysis of the Performance of DOEs

The CDM rules are vague and they provide little guidance to DOEs for validating the V & R requirements that are tools for achieving sustainable development.[589] However, the CDM Manual provides further clarification to assist DOEs in validating CDM projects.[590] While the further clarification provided is a step in the right direction, the clarification still falls short of providing DOEs with the necessary authority to supervise the V & R requirements in a way that would promote sustainable development. In other words, the CDM Manual, like the CDM rules, fails to provide guidelines and minimum standards for fulfilling those V & R requirements that are tools for achieving sustainable development.

For example, the CDM Manual clearly states that, in validating the requirement for confirmation from host Party DNA that the project assists it in achieving sustainable development, the DOE is required to determine that the LoA confirms the contribution of the proposed CDM project to the sustainable development and no more.[591] There is no requirement for the DOE to establish how the DNA arrives at this conclusion and there is no indication in the LoA of how the DNA arrives at this conclusion. Furthermore, the CDM projects assessed in Chapter 5 indicates that there is little evidence that host countries give serious consideration to the sustainable development contributions of the projects they approve. It is also most likely that host countries assume that CDM projects will contribute to

[588] *Ibid*. Paragraphs 15-23.
[589] L. Schneider and L. Mohr, 'A Rating of Designated Operational Entities accredited under the Clean Development Mechanism: scope, methodology and result' (2009), 8. Report prepared for WWF http://www.oeko.de/oekodoc/902/2009-020-en.pdf (16/4/2011)
[590] The CDM Rulebook, 'Validation and Verification Manual' http://www.cdmrulebook.org/3916 (CDM Rulebook Website 16/4/ 2011).
[591] Ibid. Paragraph 126.

their sustainable development without deliberate action on their part to ensure that this is the case.

In addition, in validating the requirement for analysis of environmental impacts and EIA, the CDM Manual only requires that DOEs should determine, through a document review and/or using local official sources and local experts, whether the project participants have undertaken an analysis of environmental impacts and an EIA, if required by the host Party.[592] DOEs are not required to ensure that the analysis of environmental impacts conducted is sufficient for the proposed project. In addition, in situations where the result of the environmental analysis indicates that the project will result in adverse environmental impacts, DOEs are not required to determine whether, based on the analysis of the environmental impacts, the decision not to conduct an EIA is appropriate.

With regards to validating stakeholder participation, the CDM Manual provides that DOEs should validate the requirement by means of document review and interviews with local stakeholders as appropriate,[593] in order to determine that: comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project have been invited;[594] the summary of the comments received from the stakeholder participation process and provided in the PDD is complete;[595] and the project participants have taken due account of any comments received and have described this process in the PDD.[596] If it is properly implemented, this is a useful provision for ensuring that the process of stakeholder participation adopted by the project participant is effective. However, this provision still

[592] Ibid. Paragraph 132.
[593] *Ibid.* Paragraph 129.
[594] *Ibid*. Paragraph 129(a).
[595] *Ibid*. Paragraph 129(b).
[596] *Ibid*. Paragraph 129(c).

leaves room for inconsistent interpretations by DOEs. For instance, the provision that the DOE should ensure the adequacy of the stakeholder participation process by means of document review and interviews with local stakeholders is vague, as the provision does not specify: how and what the DOE should use to base its decision to conduct interviews with stakeholders; and how the interview should be conducted. Therefore, the effective implementation of this provision depends on the interpretation that the DOE gives to it.

Furthermore, the CDM Manual specifies that in validating the stakeholder participation process, the DOE should ensure that local stakeholders that can reasonably be considered relevant for the proposed CDM project have been invited.[597] This could be yet another excellent opportunity for the DOE to ensure that all relevant stakeholders are involved in the consultation process. However, without providing guidelines, it is a challenge for DOEs to come to a decision on 'whether relevant stakeholders have been identified and their comments sought by CDM project participants'. The CDM Manual however, provides the required guidelines. It provides that the validation opinion of the DOE should describe the steps it has taken to ensure the adequacy of the stakeholder participation process[598] and also state its opinion on the adequacy of the process adopted by the project participants.[599]

Ultimately, DOEs do not have the requisite authority to validate the effectiveness of the fulfilment of the V & R requirements that are tools for promoting sustainable development. As discussed above, with regard to confirmation of sustainable development, stakeholder participation and the environmental analysis and EIA, the DOE can only check whether or not these have been done. The DOE has not been given the authority to assess the adequacy

[597] *Ibid.* Paragraph 129(a).
[598] *Ibid*. Paragraph 130 (a).
[599] *Ibid.* Paragraph 130 (b).

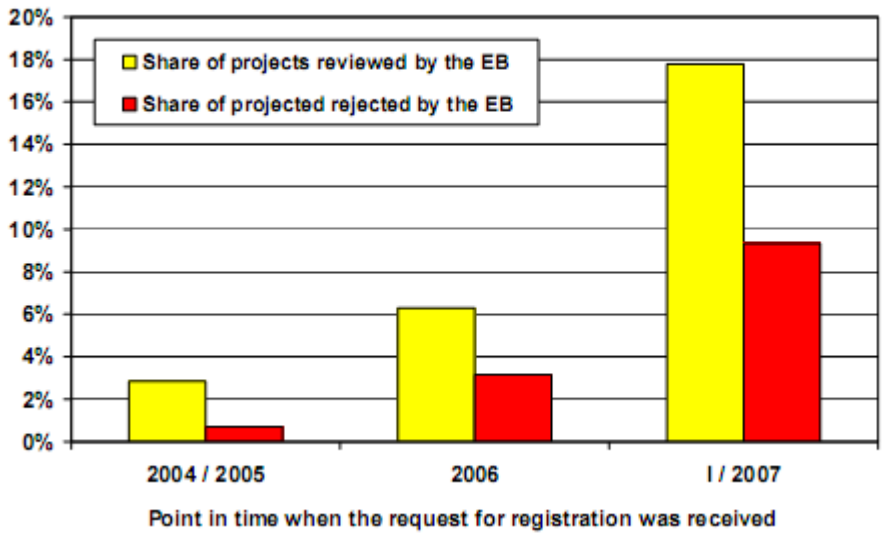
of what has been done[600]. For stakeholder participation however, the CDM Manual does provide useful guidance to the DOEs on how to examine and evaluate the adequacy of the stakeholder participation process adopted by the project participants. Although it is not clear what the effect would be if the DOE was of the opinion that stakeholder participation was not adequate, at least on the face of it, this seems to give DOEs the authority to go beyond the fact of whether or not stakeholder participation has been undertaken, to assess the adequacy of the process. This should be the same for all V & R requirements that promote sustainable development, such as the confirmation of sustainable development, environmental analysis and EIA.

With regards to their general CDM functions, recent studies rating the performance of DOEs conclude that the overall rating for all DOEs is relatively low because of the high number of projects that are rejected, reviewed or requested for corrective action by the EB.[601] Schneider's assessment of the performance of DOEs grouped their performance into three phases: phase 1 (until the end of 2005), in which the EB had to assess each project submitted for registration by DOEs; phase 2 (2006), during which the EB established the RIT to appraise the PDDs and other supporting documents of each proposed CDM project, and to highlight issues that required further consideration by the EB; and phase 3 (from 2007), during which the UNFCCC Secretariat started the 'completeness check' on each project submitted by DOEs for registration, in addition to the assessment conducted by the RIT.[602]

[600] See Section 4.2.2., the analysis of the role of the EB.
[601] See: L. Schneider and Mohr, 'A Rating of Designated Operational Entities accredited under the Clean Development Mechanism: scope, methodology and result', 14; L. Schneider, *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*; and A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 256.
[602] L. Schneider, *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 22.

Schneider notes that the number of projects that have been reviewed or rejected for registration have increased with each of these phases.[603] Figure 4.2 below illustrates this fact. However, as shown in Chapter 5, projects were mainly rejected by the EB for their failure to prove additionality or to apply the appropriate baseline and monitoring methodologies. None of the 84 rejected projects assessed in this thesis were rejected for their failure to comply with any of those V & R requirements that will promote sustainable development in the CDM, such as stakeholder participation and EIA. Therefore, the increase in the number of rejected projects, on the face of it, has little do to with the CDM's contribution to sustainable development.

Figure 4.2: Share of Reviewed and Rejected Projects by the EB



Source: L. Schneider[604]

A more recent study by Schneider and Mohr rated the performance of DOEs, focusing on the outcome of the request for registration submitted by the DOE to the EB, and whether the DOE had dealt with the fulfilment of the V & R requirements by the project participants

[603] *Ibid*.
[604] *Ibid*. at 23.

adequately.[605] The following five DOEs were rated by the authors: Bureau Veritas Certification Holding SAS (BVC); DNV Climate Change Services AS (DNV); SGS United Kingdom Limited (SGS); TÜV NORD CERT GmbH (TÜV-Nord); and TÜV SÜD Industrie Service GmbH (TÜV-Süd). The study noted that the rating for the DOEs was low because of the high number of proposed CDM projects that have been rejected, reviewed or sent back to the DOE for corrective action by the EB.[606] The study rated the DOEs in relation to their validation of the fulfilment of the V & R requirements.[607] The result of the ratings is as follows:[608] TÜV-Nord has a D rating with 0.66 points; TÜV-Süd has a D rating with 0.65 points; BVC obtained an F rating with only 0.43 points; SGS obtained an E rating with 0.54 points; and DNV obtained 0.64 points but it had a F rating because its accreditation was suspended at the time of the rating.[609] Of the five DOEs rated, TÜV-Nord and TÜV-Süd have the best performance. BVC has a poor performance because of its high share of rejected projects or projects sent back for corrective action, while SGS's performance is average.[610] Given that DOEs act as agents of the EB and their responsibility is to ensure that project participants have fulfilled the V & R requirements, this is an indictment on the overall quality of the audit and validation of proposed CDM projects.

In addition, some DOEs have been suspended and subsequently reinstated after spot checks undertaken at their offices revealed procedural breaches. For example, the following DOEs were suspended for failing to follow CDM procedures and inspection rules. In November

[605] L. Schneider and Mohr, 'A Rating of Designated Operational Entities accredited under the Clean Development Mechanism: scope, methodology and result', 10 and 12. The rating was based on 900 projects that were submitted by 14 DOEs that each had a minimum of 40 projects that had been successfully processed in the UNFCCC project pipeline between 1 April, 2007 and 31 March, 2009.
[606] *Ibid.* at 14.
[607] *Ibid.* at 5.
[608] *Ibid.* at 13.
[609] *Ibid.* at 14.
[610] *Ibid.*

2008, the accreditation of the Det Norske Veritas (DNV) was suspended and later reinstated in February 2009. Similarly, Société Générale de Surveillance (SGS UK) was suspended in 2009 and TUV SUD in March 2010.

This suggests that there are some lapses in the validation of CDM projects by DOEs. For instance, the assessment and analysis of rejected projects in Chapter 5 indicates that some projects were rejected for failing to fulfil basic V & R requirements that the DOE should have picked up on during the validation process, such as project start date. For instance, 'Capex S.A. – Agua Del Cajón Thermal Power Plant – Open To Combined Cycle Conversion' was rejected for registration by the EB because the start date of the project was before 1st January 2000.[611]

Several reasons could be proffer for the lapses in the performance of DOEs. One reason could be the possible conflict of interest in the relationship between DOEs and project participants.[612] Although DOEs are accredited by the EB and act as its agents in the validation of proposed CDM projects, they are hired and paid by the project proponents. Another possible reason could be the highly competitive market of validating, verifying and certifying CDM projects. This has possibly increased the pressure on DOEs to carry out validation and verification as quickly as possible, thereby resulting in procedural lapses and

[611] Project reference 0443, http://cdm.unfccc.int/Projects/DB/AENOR1148315176.11/view (UNFCCC Website, 15/3/ 2011. See also: project reference 0964 'San Ramón Rural Electrification Project' http://cdm.unfccc.int/Projects/DB/AENOR1172055851.47/view (UNFCCC Website, 15/ 3/ 2011; and project reference 0972 'Reduction of Flaring and Use of Recovered Gas for Methanol Production' http://cdm.unfccc.int/Projects/DB/DNV-CUK1172829303.42/view (UNFCCC Website 15/3/ 2011; and L. Schneider, *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, 25.

[612] Decision 3/CMP.1 Annex, Paragraph 27(d).

non-compliance. According to Schneider, the race to attract more validation business has resulted in the falling of standards.[613]

Also, while the number of projects rejected by the EB and the number of projects going through the review process has increased since 2007, there are very few instances where the DOE rejects the validation of projects for failing to fulfill the V & R requirements. For instance, Michaelowa cited just one example of a DOE that publicly rejected the validation of a proposed hydro project in China because it became clear during the review process that the project start date did not conform to the CDM rules and the investment analysis proving the additionality of the project was dishonest.[614] However, note that this rejection was only made after the project had been sent to the EB by the DOE and that the DOE had earlier confirmed, through its validation report, that the project had fulfilled the V & R requirements, and requesting that the project be registered as a CDM project. The request for review was made by the EB and it was only then that the DOE disassociated itself from the project.[615]

Addendum

Although the CDM Manual was replaced with the CDM VVS, there is very little difference in the validation requirements and means of validation contained in both provisions.[616] As such, the CDM VVS has the same shortcomings as the CDM Manual; it provides little guidance to DOE for validating those V & R requirements that are tools for promoting

[613] L. Schneider, *Is the CDM fulfilling its environmental and sustainable development objectives? an evaluation of the CDM and options for improvements*, 20.
[614] A. Michaelowa, 'Interpreting the Additionality of CDM Projects: Changes in Additionality Definitions and Regulatory Practices over time' in D. Freestone and C. Streck (eds.), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 263.
[615] The DOE was TÜV SÜD, an international certification organisation.
[616] Paragraph 125 of the CDM Manual states that the DOE shall determine whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.

sustainable development. For example, the validation requirement for contribution to sustainable development in the CDM VVS states that the DOE shall confirm that the DNA has 'considered' whether the proposed CDM project assists the host Party in achieving sustainable development. In addition, the means of validation states that the DOE shall determine whether the LoA by the DNA of the host Party confirms the contribution of the proposed CDM project to the sustainable development of the host Party.[617] The provisions in the CDM VVS with regards to validating the contributions to sustainable development remains vague because it does not establish parameters for determining how the DNA should 'consider' whether the proposed CDM project assists the host Party in achieving sustainable development. The validation of this requirement is therefore dependent on the subjective opinion of the DOE because the DNA is not required to show how it arrived at the confirmation that the project contributes to sustainable development and there is no indication in the LoA of how the DNA arrives at this conclusion. Therefore, the DOE can only assume 'consideration' of sustainable development contribution from the LoA.

The clarification on validating the requirement to conduct environmental analysis and EIA is also insufficient. Specifically, the CDM VVS did not attempt to change or provide further clarification for fulfilling this requirement. Paragraph 134 of the CDM VVS states that the DOE shall determine whether the project participants conducted an analysis of the environmental impacts, including transboundary impacts, and whether those impacts are considered significant by the project participants or the host Party. To validate this requirement, the DOE is only required to assess the fulfilment of the requirements by means of a document review and/or using local official sources and expertise.[618] The CDM VVS

[617] CDM VVS, Paragraphs 50 and 51.
[618] *Ibid*. Paragraph 136.

does not provide further guidance to the DOE, on instances where the impacts are significant and an EIA is deemed not necessary by the project participants and the DNA. The DOE is only required to base its validation report on whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an EIA. [619]

With regards to the requirement for stakeholder's participation, there is very little difference in the provisions of the CDM Manual and the CDM VVS. The means of validation are the same for both,[620] however there is a slight difference in the validation requirement. Both the CDM VVS and the CDM Manual state that the DOE shall determine whether the project participants have completed a local stakeholder consultation process. The CDM VVS adds an additional validation requirement that that the DOE shall determine whether due steps were taken by project participants to engage stakeholders and solicit comments.[621]

Overall, the CDM VVS is only a slight improvement on the CDM Manual. This is to be expected because the CDM VVS, like the Manual, can only prescribe validation steps that are contained in the CDM rules and the CDM PS. Therefore, where the CDM rules and the CDM PS do not prescribe additional steps for project participants to fulfil, then the CDM VVS cannot seek to validate additional requirements that are not contained in the CDM rules and the CDM PS.

[619] *Ibid*. Paragraph 137.
[620] Both provisions states that the DOE shall determine whether comments have been invited from local stakeholders that are relevant for the proposed project activity, the summary of the comments provided in the PDD is complete, and project participants have taken due account of all comments received and have described this process in the PDD. See Paragraphs 129 and 139 respectively of the CDM Manual and the CDM VVS respectively.
[621] CDM VVS, Paragraph 138.

4.2.6: Designated National Entity (DNA)

(a) Composition and Characteristics of DNAs

As discussed in Chapter 3, the CDM rules do not prescribe the structure or model for establishing DNAs. However, generally, countries participating in the CDM adopt *inter alia*, the single government model, two-unit model.[622] Each Party wishing to participate in the CDM must establish a DNA.[623] Thus DNAs must be established by both the Annex I Party participant and the non-Annex I Party.[624] The DNA of a country is the principal point for CDM activities in both Annex I and non-Annex I countries.[625]

(b) Functions of DNAs

The DNA of both Annex I and non-Annex I Parties approves proposed CDM projects through the issuance of a LoA.[626] For Annex I Parties, a LoA from the Annex I DNA must confirm that the Party has ratified the KP and that its participation is voluntary. Thus, the role of the Annex I country DNA in the validation and registration process is limited to the granting of a LoA. However, for non-Annex I Parties, the host country DNA must confirm that: the Party has ratified the KP; participation in the CDM is voluntary; and the project contributes to sustainable development in the host country. The DNA issues the LoA upon confirmation of these additional requirements and any other country specific requirements.[627]

The CDM rules are sparse on the functions and role of DNAs.[628] Therefore Parties, especially non-Annex I Parties, could bestow additional responsibilities on their DNAs, above the minimum requirements specified in the CDM rules. The role of the DNA in the CDM can be

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[622] See Chapter 3, Section 3.2.1.
[623] Decision 3/CMP.1, Annex, Paragraphs 29 and 37(a).
[624] *Ibid*.
[625] The DNA has been discussed extensively in Chapter 3, Section 3.2.1.
[626] Decision 3/CMP.1, Annex, Paragraph 40(a).
[627] *Ibid*.
[628] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues* (Roskilde: UNEP Risoe Centre, 2009), 20.

broadly classified into regulatory and promotional functions.[629] The regulatory function involves establishing an approval process for proposed CDM projects and in the case of CDM host country, confirmation of sustainable development contribution of the proposed CDM project. This regulatory function is a prerequisite for the validation and registration of proposed CDM projects and it must be performed by all DNAs involved in the CDM project[630] The promotional functions of the DNA are not mandatory.[631] For example, it has been suggested that the DNA can assume the following promotional roles: promote CDM activities and organise training activities for various stakeholders;[632] assist in the identification of investment opportunities;[633] and identify priority areas for CDM project implementation.[634]

Analysis of the Role and Performance of DNAs

The DNA is a key part of the validation and registration process. This is because the DNA implements the fulfilment of the V & R requirements in the host country and they ensure that national rules and regulations are adhered to by project participants. Another key role of the DNA is the approval and issuance of the LoA. This is because without the host country approval, and the issuance of a LoA, proposed projects cannot proceed to project validation and registration. Unfortunately, it appears that host country DNAs have not utilised the authority that this role confers upon them to ensure that CDM projects promote their sustainable development priorities. For instance, none of the host countries analysed in this thesis requires that the sustainable development benefits described in the PDD should be

[629] M. Castro, 'The functions of a national authority' in C. Figueres (ed.), *Establishing National Authorities for the CDM: A Guide for Developing Countries* (Washington DC, International Institute for Sustainable Development and the Center for Sustainable Development in the Americas: 2002), 63.
[630] Ibid.
[631] See Chapter 3, Section 3.2(b) which discusses *inter alia*, the different DNA structures.
[632] D. Hayashi, A. Michaelowa, 'Efficient DNA operation: Lessons from different DNA settings in non-Annex-B countries' HWWI Research Paper 4-10, 2.
[633] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 23.
[634] *Ibid.*

monitored alongside the V & R requirement to monitor and verify GHG reductions achieved.[635] In the same vein, none of the DNAs require that sustainable development contribution should be verified at the verification stage, before the project is certified and awarded CERs. In other words, a project that claims in the PDD (before gaining approval from the DNA) that it will, for example, commit a percentage of the CERs to community development programmes and fails to do so is unlikely to be penalised by the CDM host country DNA.[636]

The absence of guidelines and minimum standards for the fulfilment and implementation of the V & R requirements should be considered a challenge and an advantage by DNAs. This is because DNAs do not require approval from the COP/MOP or the EB to establish national additional criteria that will promote their development priorities. The V & R requirements are mere checklist of requirements and DNAs can go over and above those requirements to provide guidelines and standards that will ensure that CDM projects contribute to the sustainable development objectives of host countries. Having said this, it is important to acknowledge that the competitive nature of the CDM, and host countries' desire to attract CDM projects and the foreign investment it brings, may impede host countries from going over and above what is required by the V & R requirements and the CDM PS and VVS adds very little to the required minimum.

4.3 Do the COP/MOP and EB Have the Competence to Prescribe Minimum

[635] K. Olsen and J. Fenhann, 'Sustainable development benefits of Clean Development Mechanism projects: a new methodology for sustainability assessments based on text analysis of the project design documents submitted for validation' (2008) 36 *Energy Policy* 2819 at pg. 2821. As Olsen and Fenhann notes, none of the CDM host countries currently require that the expected SD benefits, described in the PDD, are monitored on an equal basis like the GHG reductions are.

[636] *Ibid.* See also: E. Boyd *et al*., 'Reforming the CDM for sustainable development: lessons learned and policy futures' (2009) 12(7) *Environmental Science & Policy* 820 at pg. 828; A. Bozmoski *et al*., 'Prosperous negligence: governing the CDM for markets and development' (2008) 50(3) *Environment: Science and Policy for Sustainable Development* 18-30.

Standards or Guidelines for the Fulfilment of the V & R requirements for CDM Projects?[637]

The analysis of the V & R requirements in Chapter 3 indicates that the V & R requirements do not provide minimum standards regarding the fulfilment of those V & R requirements that promote sustainable development in CDM host countries.[638] The CDM rules regarding the fulfilment of those V & R requirements only provides checklist of *what* should be fulfilled and not minimum standards on *how* those requirements should be fulfilled. Furthermore, the analysis in Chapter 3 also indicates that the CDM PS and the VVS do not go far enough to prescribe the required minimum standards and guidelines lacking in the CDM rules, for fulfilling those V & R requirements that promote sustainable development. In addition, Chapter 3 concluded that minimum standards and guidelines, for the fulfilment of the V & R requirements, are essential to ensure that the CDM achieves its sustainable development objective.

Having analysed the roles and functions of relevant CDM governing institutions that have authority over, and supervise, the CDM, this section considers if these institutions can prescribe minimum standards for fulfilling those V & R requirements that promote sustainable development.[639] It does this bearing in mind that this thesis has established that the CDM's institutional body has prescribed minimum standards and guidelines for fulfilling and implementing those V & R requirements that are relevant for the effective governance of the emission reduction objective of the CDM.

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[637] H. Bulkeley and P. Newell, *Governing Climate Change*, 11. The authors suggests that "Global governance therefore encompasses the numerous activities which are significant both in establishing international rules and in shaping policy through 'on-the-ground' implementation even when some such activities originate from actors that, technically speaking, are not endowed with formal authority."

[638] Recall that most of the V & R requirements are fulfilled according to national rules and legislations in the CDM host country and that the CDM rules provide that it is the host country's prerogative to decide if a project contributes to its sustainable development priorities. Indeed, the DOE is only required to have received a written confirmation from the host party confirming that the project assists it in achieving sustainable development.

[639] See conclusions reached in Chapter 3.

The COP/MOP and the EB are international organisations, and like any international organisation, they have only such powers as have expressly been conferred on them by their constituent instruments or that can be implied from those instruments.[640] The analysis of the competence of the COP/MOP and the EB to prescribe minimum standard or guidelines, for those V & R requirements that promote sustainable development, will be answered in three parts: does the COP/MOP have the competence to prescribe minimum standard or guidelines for the fulfilment of the V & R requirements? Does the EB also have the competence to prescribe guidelines or minimum standards for the fulfilment of the V & R requirements? If the answer is no, can such powers be implied from their constituent instruments?

The COP/MOP is an example of an international organisation created by an international agreement amongst States.[641] The COP/MOP, like any other international organisation, has only such powers that are expressly conferred on it by its constituent agreement (the KP and relevant COP/MOP decisions, such as Decision 3 CMP.1).[642] The COP/MOP, by virtue of the UNFCCC, the KP and the CDM rules, has a broad mandate to review and promote the effective implementation of the UNFCCC and the KP.[643] Article 13(4) of the KP provides that "[t]he Conference of the Parties serving as the meeting of the Parties to this Protocol shall keep under regular review the implementation of this Protocol and shall make, within its mandate, the decisions necessary to promote its effective implementation." Furthermore,

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[640] See: P. Sands and P. Klein, *Bowett's Law of International Institutions* 6th edn. (London: Sweet & Maxwell, 2009), 297; D. Sarooshi, *International Organizations and Their Exercise of Sovereign Powers* (Oxford: Oxford University Press, 2005); M. Shaw, *International Law* 6th edn. (Cambridge: Cambridge University Press, 2008), 1297. See also: R. Flathman, 'Legitimacy' in R. Goodin and P. Pettit (eds.), *A Companion To Contemporary Political Philosophy* (Oxford: Blackwell Publishers Limited, 1995), 527.

[641] P. Sands and P. Klein, *Bowett's Law of International Institutions,* 126-127.

[642] *Ibid.* at 301.

[643] See Articles 7 and 13 of the UNFCCC and the KP respectively, basically the same provisions. Also see: Paragraph f of Article 13 of the KP; and D. Feaver and N. Durrant, 'A Regulatory analysis of international climate change regulation' (2008) 30(4) *Law & Policy* 394 at pg. 406.

Article 13(4) (f) of the KP provides that the COP/MOP can make recommendations on any matter necessary for the implementation of the KP.[644] Therefore, the provision of Art 13(4) is broad enough to allow the COP/MOP to recommend guidelines and minimum standards for the effective fulfilment and implementation of the V & R requirements.

With regards to the second part of the question, i.e. does the EB also have the competence to prescribe guidelines or minimum standards for the fulfilment of the V & R requirements, the answer is also yes. Article 12(4) of the KP provides that the CDM shall be subject to the authority and guidance of the COP/MOP and be supervised by the EB. The CDM rules also affirm the supervisory role of the EB; it mandates the EB to supervise the CDM, whilst remaining fully accountable to the COP/MOP.[645] For instance, in their supervision of the CDM, the EB makes recommendations to the COP/MOP on further modalities and procedures for the CDM, as appropriate,[646] as well as recommendations for amendments or additions to its rules of procedure.[647] The wordings of Article 12(4) and the provisions of the CDM rule therefore suggest a delegation of authority to the EB by the COP/MOP. This therefore implies authority to act as a regulatory body for the implementation of the CDM and to ensure the mechanism achieves its dual purpose. In accordance with its duty to act as a regulatory body for the implementation of the CDM and to ensure the mechanism achieves its cost-effective emission reduction objective, the EB provides guidelines to ensure the effective fulfilment and supervision of some of the V & R requirements, such as the 'Tool for the demonstration and assessment of additionality.'[648]

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[644] Furthermore, Paragraph 2 of the CDM rules states that the COP/MOP shall have authority over and provide guidance to the CDM.
[645] *Ibid.* Paragraph 5.
[646] *Ibid.* Paragraph 5(a).
[647] *Ibid.* Paragraph 5(b).
[648] The latest version of the additionality tool (Version 05) was adopted at EB 39, Annex 10, http://cdm.unfccc.int/EB/039/eb39_repan10.pdf (UNFCCC Website, 16/8/ 2011).

In the same vein, the EB can, and should, provide guidelines and minimum standards for the fulfilment of those V & R requirements that are regarded as tools for promoting sustainable development. The introduction of guidelines or minimum standards would not pre-empt the sovereignty of host countries to define their development priorities according to their own needs. This is because the guidelines or minimum standards, although not binding on Parties, it will act as a guide and it will provide minimum standard for fulfilling V & R requirements in a way that promotes sustainable development. For example, the 'Tool for the demonstration and assessment of additionality,' is not binding on project participants, but it is widely used by project participants as a general framework to demonstrate additionality.[649] Despite its challenges,[650] there is no doubt that the additionality tool has helped to set minimum standards and guide project participants in proving the additional reduction that are likely to occur as a result of the implementation of the proposed CDM projects.

In addition, this author believes that the fact that a sovereign State is a Party to the UNFCCC and the KP, it has invariably curtailed some of its sovereign rights in this regard. This is because States have increasingly conferred broader public powers of governance on international organisations. Furthermore, the issue of State consent in the acceptance of the decisions of international organisations has been eroded. According to Sarooshi, "[i]nternational organizations have increasingly themselves interpreted their powers – even of binding decision – in an expansive manner that blurs the role of State consent." If a host country accepts to host CDM projects, it can safely be assumed that it has 'self-imposed' the authority of the CDM's institutional bodies and invariably consents to their authority to prescribe, for

[649] A. Michaelowa, 'Interpreting the additionality of CDM projects: changes in additionality definitions and regulatory practices over time' in D. Freestone and C. Streck (eds), *Legal Aspects of Carbon Trading: Kyoto, Copenhagen and Beyond*, 54.
[650] See discussion in Chapter 3, Section 3.2.4 for discussion on the additionality test.

example, minimum standards and guidelines for fulfilling the V & R requirements that are necessary for promoting sustainable development.[651] According to Streck

> If the COP/MOP decisions do not display any clear legally binding effects on the Parties to the treaty; this is far less the case for the decisions of the EB. Furthermore, it appears from the last five years of CDM implementation that while the decisions of the board do not have a formally binding effect on the Parties to the Protocol, their effect has been accepted as *de facto* binding on entities that participate in the CDM, which includes both Parties to the Protocol and private and public sector legal entities.[652]

4.4 Conclusion

The CDM is an ever evolving mechanism. It is arguably one of the most innovative experiments in international law to date. For example, it facilitates private-public partnerships, which is essential to address the 'multi-level' challenges of climate change.[653] However, as with most innovative mechanisms, there is room for improvement, especially with regard to its institutional framework, which is relevant for the effective supervision of the V & R requirements.[654]

This chapter has analysed whether the institutional structure of the CDM can effectively supervise the fulfilment of the V & R requirements, so as to promote the sustainable development objective of the CDM. The chapter concludes that the KP, the CDM rules, the CDM Manual and the CDM VVS do not confer sufficient authority on the the CDM's

[651] C. Streck and J. Lin, (2008), 417.
[652] C. Streck, (2007) 95.
[653] See: C. Streck, (2007), 99 and H. Bulkeley and P. Newell, *Governing Climate Change*, 4.
[654] J. Sepibus, 'The environmental integrity of the CDM Mechanism – a legal analysis of its institutional and procedural shortcomings', 14. Sepibus notes that despite the various procedural and institutional safeguards built into the registration process for CDM projects, the process is not sufficient.

institutional bodies, to ensure the effective implementation and supervision of those V & R requirements that will promote the sustainable development objective of the CDM.

This is because the CDM rules and the CDM Manual do not confer on the DOEs the authority to go beyond the checklist and ensure that those V & R requirements that will contribute to sustainable development are fulfilled in a way that will promote sustainable development in the host country. For instance, apart from the additionality test and the baseline and monitoring methodologies, the other V & R requirements such as stakeholder participation and EIA are implemented by the host country, without guidelines or minimum standards for their fulfilment. As it is, CDM's institutional bodies can only check whether these requirements have been fulfilled on the face of it – they do not have the authority to assess how the requirements have been fulfilled and whether the fulfilment has been done in such a way as to promote or ensure sustainable development. Furthermore, although the CDM VVS provides some clarification that will assist the DOE in its validation of some of the V & R requirements, the clarification does not go far enough to ensure effective supervision of those V & R requirements that are essential for achieving sustainable development in CDM host countries by the CDM's institutional bodies. This is a key failing of the current CDM rules, which affects the institutional strength and capacity of the CDM's institutional body and their ability to implement and supervise effectively the V & R requirements.

The authority of the EB to impose minimum standards and guidelines for fulfilling the V & R requirements, especially those that promote sustainable development, has been established in this chapter. However, there is reluctance on the part of the EB to prescribe minimum standards and further guidelines for fulfilling those V & R requirements that will promote

sustainable development. This author can only speculate that one of the reasons for the reluctance, to prescribe minimum standards and guidelines, stem from the wish of the EB to respect the sovereignty rights of States to prescribe national rules and regulations that will aid the fulfillment of the V & R requirements implemented by CDM host countries. However, to ensure that the dual objectives of the CDM are effectively supervised, the CDM's institutional bodies should not adopt a 'hands-off policy' on supervising the effective implementation of the sustainable development objective of the CDM. Furthermore, DNAs should utilise their prerogative to define sustainable development priorities, to ensure that CDM project contributes to sustainable development in host countries.

This chapter restates the recommendation made in Chapter 3 that the EB should provide guidelines and minimum standards for ensuring that V & R requirements are fulfilled, implemented and supervised to promote sustainable development. The following chapter examines how the V & R requirements have been fulfilled in practice by project participants and the CDM's governing bodies.

CHAPTER FIVE

FULFILMENT, IMPLEMENTATION AND SUPERVISION OF THE VALIDATION AND REGISTRATION REQUIREMENTS

5.1 Introduction

Chapters 3 and 4 examined the suitability of the V & R requirements and the institutional structures of the CDM and the ability of both to promote the CDM's sustainable development objective. The overall conclusion reached is that they are both limited in their capacity to promote the sustainable development objective of the CDM. The purpose of this chapter is to determine whether, despite these lapses, the V & R requirements for CDM projects are effectively fulfilled by project participants, implemented by host country DNAs and supervised by the CDM's institutional body in a way that promotes sustainable development in CDM host countries. To do this, this chapter assesses[655] and analyses selected registered and rejected CDM projects. The purpose of the assessment and analysis of registered CDM projects is to determine *how* project participants fulfil the V & R requirements that are regarded as tools for achieving sustainable development and *how* the DNA implements those requirements to determine whether the fulfilment and implementation of the requirements promote sustainable development in CDM host countries. Rejected projects are assessed and analysed to determine *how* the CDM's institutional bodies supervise the fulfilment of those requirements. This will allow a conclusion to be reached about the extent to which the CDM's institutional body, notably the EB, ensures compliance with those V & R requirements that can promote sustainable development in CDM host countries.

This chapter answers the second part of the main research questions, i.e. how are the V & R

[655] Note that the assessments of the registered and rejected projects are set out in Appendix 3 of this thesis.

requirements for CDM projects fulfilled, supervised and implemented in practice, and has the practical application of V & R requirements helped or hindered the promotion of sustainable development?

This chapter is divided into three sections: Section 1 outlines the method used for the assessment of the registered and rejected projects, together with the percentage of projects, sectoral scopes and host countries assessed; Section 2 presents the findings from, and analysis of, the assessment of the registered projects; and Section 3 presents the findings from, and analysis of, the assessment of the rejected projects.

5.2 Project Selection and Methodology for Assessment[656]

As explained above, this chapter undertakes a critique of the fulfilment and implementation of the V & R requirements that are regarded as tools for promoting sustainable development. For this, selected registered projects are analysed to determine how the requirements are fulfilled and implemented by project participants and DNAs and selected rejected projects are analysed to determine how the requirements are supervised by the CDM's governing structure.[657]

(a) Selection of Registered Projects

For the initial assessment of registered projects, 100 registered CDM projects were selected from the UNFCCC project database.[658] At the time of project selection in January 2008,[659]

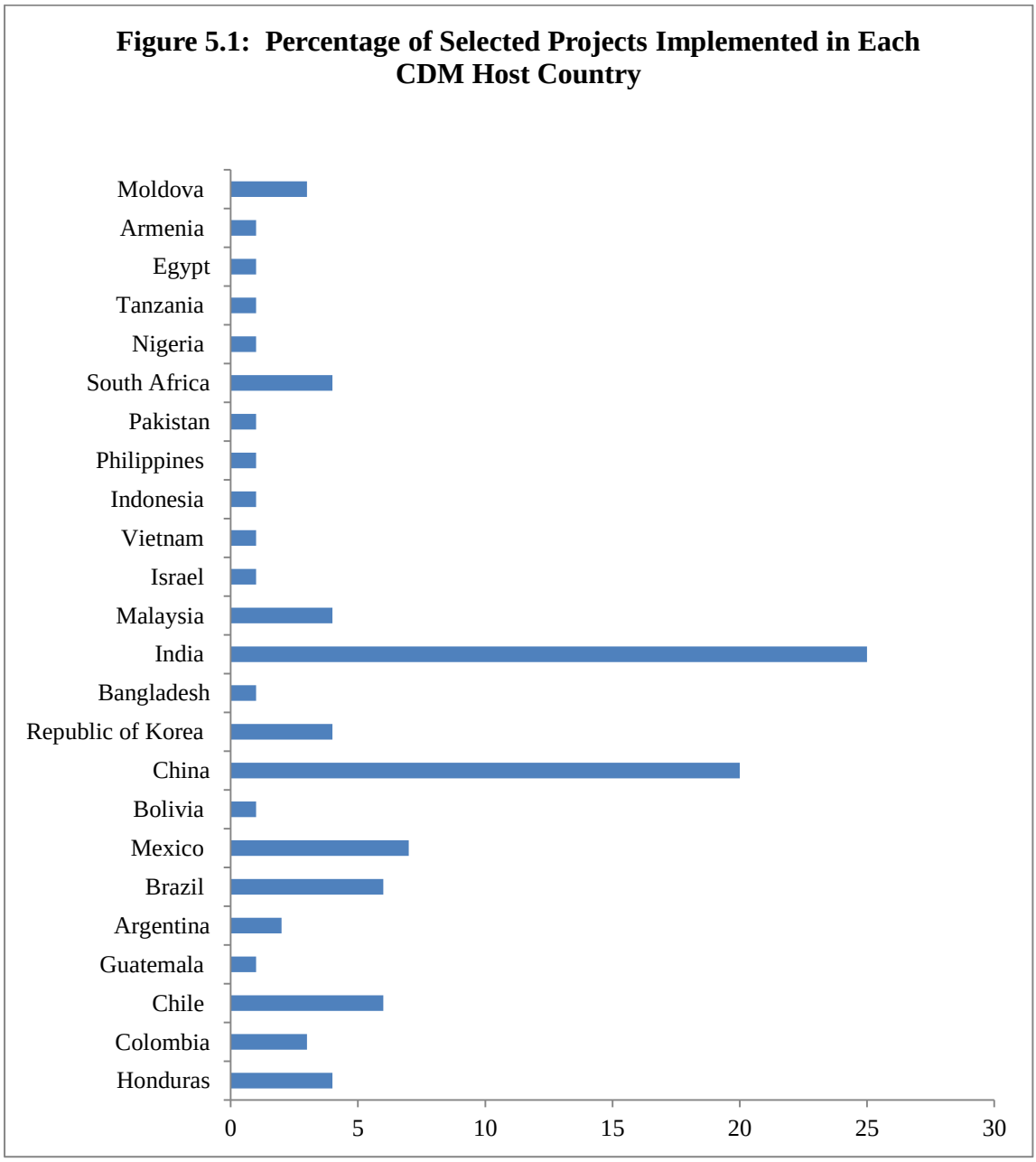
[656] See Chapter 1, Section 1.3.3 for a detailed discussion of methodology.
[657] See Chapter 3 for analysis of the V & R requirements.
[658] See Appendix 1 of this thesis for a list of the CDM projects assessed. See Chapter 1, Section 1.3.3, for a more detailed discussion of how and why projects have been selected.
[659] The projects assessed in this thesis were selected in 2008, which is when this author began assessing and analysing the projects. The projects were selected from all registered projects as at December 2007, which is the cut-off date chosen in order to allow time for project analysis and the presentation of findings in the thesis within the time allowed for a PhD thesis. See Chapter 1, Section 1.3.3 for a more detailed explanation of the thesis methodology, including the selection of projects assessed and analysed.

there were over 1000 registered CDM projects in the UNFCCC project pipeline and 10% (100) of those projects were selected. The 100 registered projects consist of 32 small-scale and 68 large-scale CDM projects. Of these 100 CDM projects, 83 are Annex I-sponsored projects and 17 are unilateral.[660] Projects are also selected from all the sectoral scopes[661] that had projects registered under them as at the date of project selection. The CDM projects were selected from the following 24 developing host countries. The breakdown of the projects assessed by countries and number of projects are: 8 host countries in Latin America and the Caribbean: Honduras (4), Colombia (3), Chile (6), Guatemala (1), Argentina (2), Brazil (6), Mexico (7) and Bolivia (1); 10 in Asia: China (20), Republic of Korea (4), Bangladesh (1), India (25), Malaysia (4), Israel (1), Vietnam (1), Indonesia (1), Philippines (1) and Pakistan (1); 4 in Africa: South Africa (4), Nigeria (1), Tanzania (1) and Egypt (1); and 2 in Europe: Armenia (1) and Moldova (3). See Figure 5.1 below for the percentage of selected projects implemented in each of these countries.

[660]Note that the proportion of Annex I to unilateral projects in this thesis is not representative of the proportion of Annex I to unilateral projects in the UNFCCC CDM project pipeline. Annex I sponsored project are projects that Annex I Parties or their entities sponsor as project participants. An Annex I project can be bilateral or multilateral. A bilateral CDM project involves an Annex I Party or entity investor and a host developing country. A multilateral CDM project involves two or more Annex I Party investors and a CDM host country. Examples of multilateral CDM projects are those administered by international financial agencies such as the World Bank, where investors contribute to a multilateral fund and the funds are used to invest in CDM projects in order to generate carbon credits. Unilateral CDM projects refer to CDM projects that do not have an Annex I Party or entity as project participants (sponsors) of a CDM project. See Appendix 1 of thesis for a list of the projects assessed.

[661] There are fifteen sectoral scopes for CDM projects. The list of sectoral scopes is based on the list of sectors and sources contained in Annex A of the Kyoto Protocol. The scopes are: Energy industries (renewable-/non-renewable sources) (scope 1); Energy distribution (scope 2); Energy demand (scope 3); Manufacturing industries (scope 4); Chemical industry (scope 5); Construction (scope 6); Transport (scope 7); Mining/Mineral production (scope 8); Metal production (scope 9); Fugitive emissions from fuels (solid, oil and gas) (scope 10); Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride (scope 11); solvents use (scope 12); Waste handling and disposal (scope 13); Afforestation and reforestation (scope 14); and Agriculture (scope 15). Scopes 1 to 9 are industrial sectors and 10 to 13 are sectors based on sources of GHG emissions. A CDM project could be registered under one sectoral scope or more. See 'CDM project activities' http://cdm.unfccc.int/Projects/projsearch.html (UNFCCC Website, 12/12/ 2010). Also see 'Methodologies linked to sectoral scopes' http://cdm.unfccc.int/DOE/sectoral sectoral scopes.html (UNFCCC Website, 12/12/ 2010).

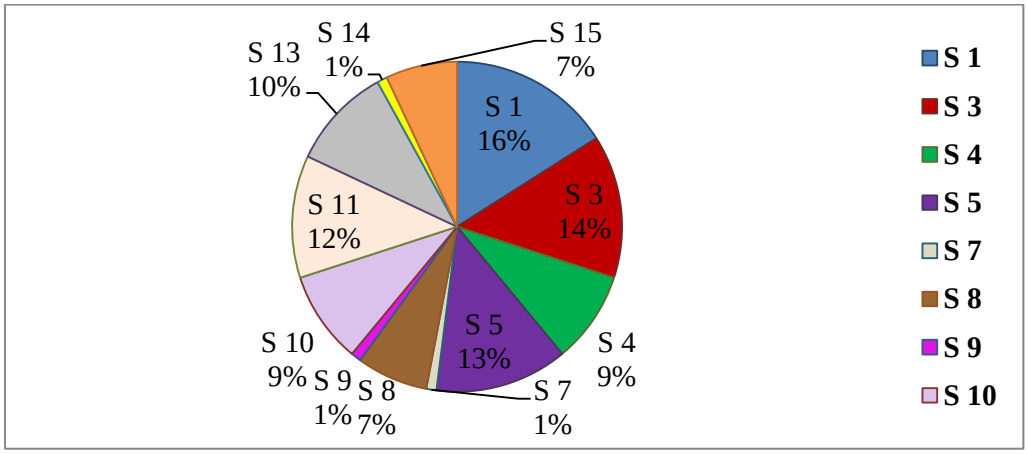
Figure 5.1: Percentage of 100 Projects Selected and Assessed by Host Country



As at December 2007, only 12 of the 15 sectoral scopes had projects registered under them and the 100 projects were selected from the 12 scopes as follows: 16 CDM projects from energy industries (renewable-/non-renewable sources (sectoral scope 1); 14 from energy demand (sectoral scope 3); 9 from manufacturing industries (sectoral scope 4); 13 from

chemical industry (sectoral scope 5); 1 from transport (sectoral scope 7); 7 from mining/mineral production (sectoral scope 8); 1 from metal production (sectoral scope 9); 9 from fugitive emissions from fuels (solid, oil and gas) (sectoral scope 10); 12 from fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride (sectoral scope 11); 10 from waste handling and disposal (sectoral scope 13); 1 from afforestation and reforestation (sectoral scope 14); and 7 from agriculture (sectoral scope 15). The following sectoral scopes did not have registered CDM projects at the time of project selection: energy distribution (sectoral scope 2); construction (sectoral scope 6); and solvents use (sectoral scope 12). The position remained the same for these sectoral scopes as of 1st May, 2012. See Figure 5.2 below for percentage of selected projects by sectoral scope.

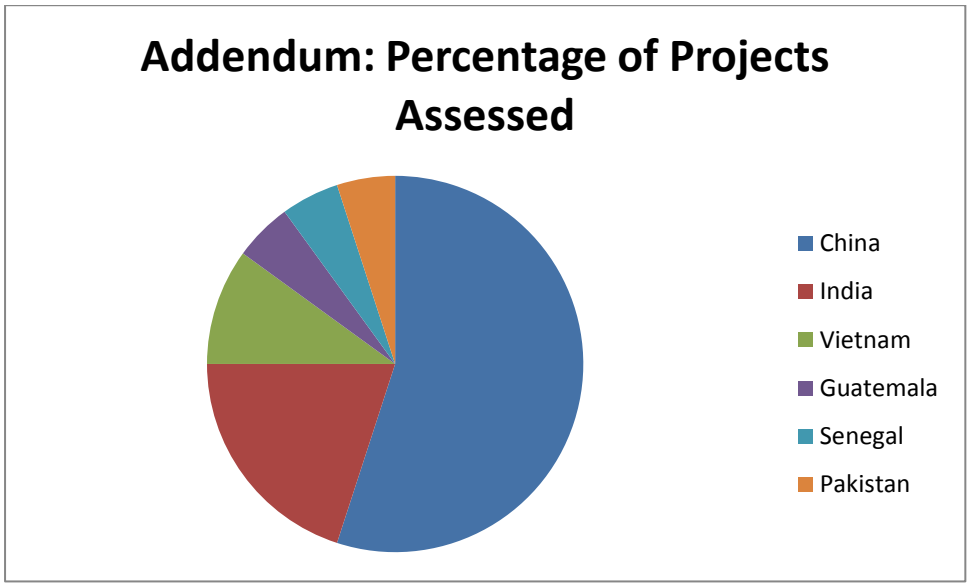
Figure 5.2: Percentage of CDM Projects Assessed by Sectoral Scope



As stated in Chapter 1, to determine if there has been an improvement in the way the V & R requirements have been fulfilled and implemented over time, 20 registered CDM projects were selected from the UNFCCC's project pipeline from 1st of January 2012 to 21st May 2012. The projects were also selected from all the sectoral scopes that had projects registered under them as at the date of project selection. The CDM projects were selected from

following 6 developing host countries. The breakdown of the projects assessed by country and number of projects are: Senegal (1); India (4); Vietnam (2); Guatemala (1); China (11); Pakistan (1). The analysis of this further study is presented in Section 5.3.5 below. See Figure 5.3 below for percentage of selected projects.

Figure 5.3: Addendum: Percentage of Projects Assessed by Host Country



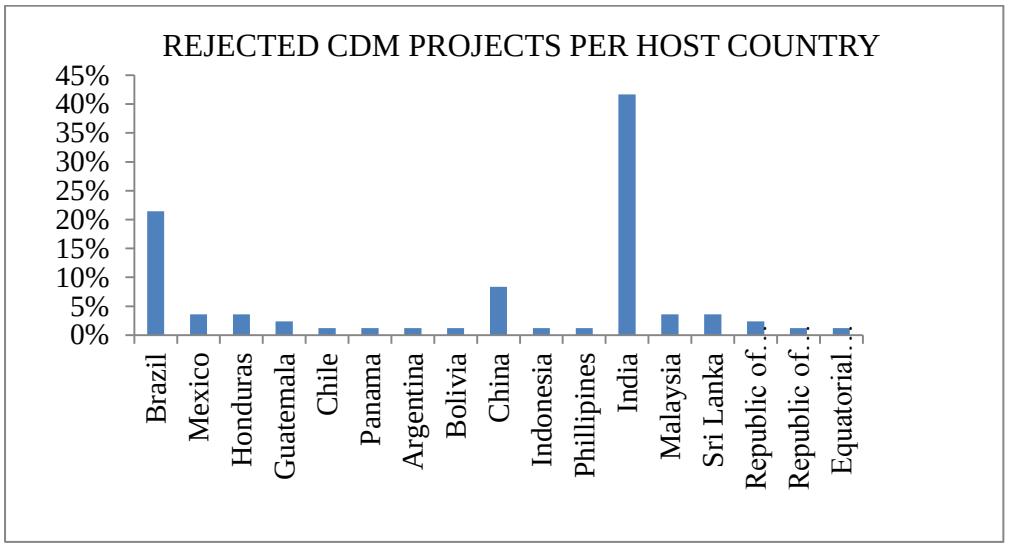
(b) Selection of Rejected Projects

84 rejected CDM projects across all the sectoral scopes were assessed. At the time of project selection in December 2008,[662] there were 84 rejected projects and all of these projects were assessed for this thesis.[663] The rejected CDM projects assessed consist of 38 small-scale and 46 large-scale projects, and of 36 Annex I sponsored and 48 unilateral projects.[664] Furthermore, the projects were proposed to be implemented in 17 host countries as follows: 8 host countries in Latin America: Honduras (3 projects), Panama (1 project), Chile (1 project),

[662] The cut-off date for rejected project selection is 1 December, 2008, which is a year later than the cut-off date for registered projects. Similar to the registered projects, the cut-off date for rejected projects was decided in order to allow time for project analysis and the presentation of findings in the thesis, within the time allowed for a PhD thesis.
[663] There are currently 3,176 registered CDM projects in the UNFCCC's project pipeline and 197 rejected CDM projects. See 'CDM: project activities' http://cdm.unfccc.int/Projects/index.html , (UNFCCC Website, 19/6/2011). See Chapter 1, Section 1.6 for a detailed explanation of the project selection process.
[664] See Appendix 2 of thesis for a list of the rejected CDM projects assessed.

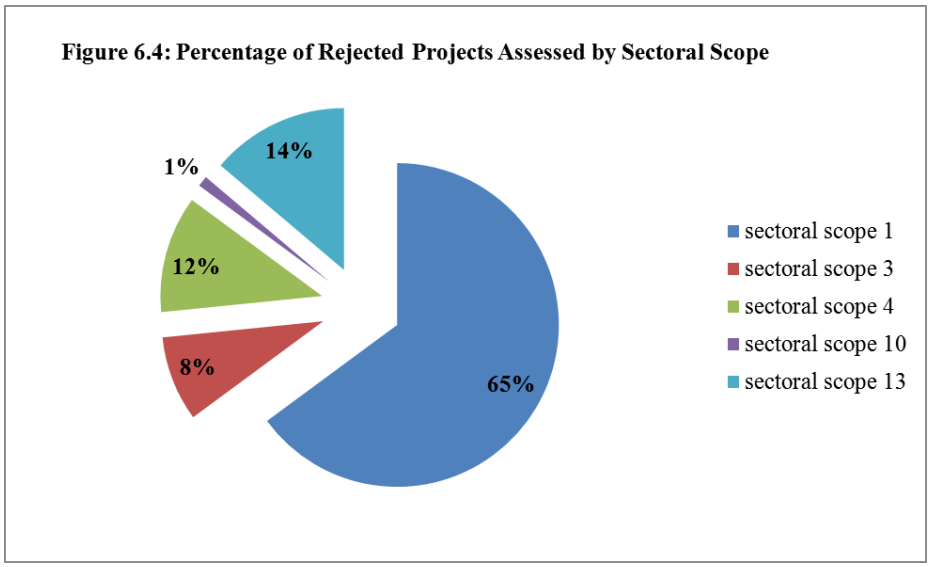
Guatemala (2 projects), Argentina (1 project), Brazil (18 projects), Bolivia (1 project), and Mexico (3 projects); 7 in Asia: China (7 projects), India (35 projects), Republic of Korea (2 projects), Indonesia (1 project), Philippines (1 project), Sri Lanka (3 projects) and Malaysia (3 projects); 1 in Africa: Equatorial Guinea (1 project); and 1 in Europe: Republic of Macedonia (1 project). The following host countries dominate the rejected projects analysed: India (45%); Brazil (22%); China (10%); and Mexico (4%). See Figure 5.4 below for the percentage of rejected projects assessed by host country.

Figure 5.4: Percentage of 84 Rejected Projects Selected by Host Country



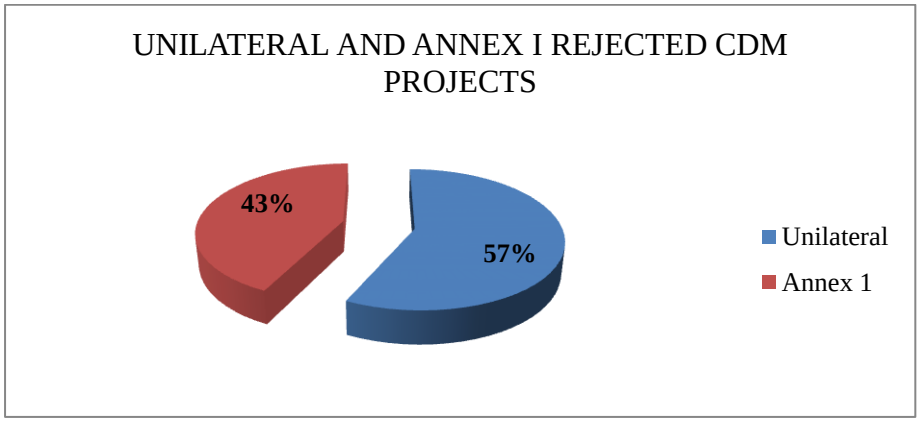
In terms of scope, the rejected projects assessed for this study were proposed in the following 5 sectoral scopes: 61 projects were rejected for registration in sectoral scope 1; 8 in sectoral scope 3; 11 in sectoral scope 4; 3 in sectoral scope 13 and 1 in sectoral scope 10. See Figure 5.5 below for the percentage of rejected projects assessed by sectoral scope.

Figure 5.5: Percentage of Rejected Projects Assessed by Sectoral Scope



Also, in terms of project type, 48 of the projects are unilateral while 36 are Annex I sponsored projects. Further analysis of the data reveals that rejected CDM projects in developing countries that do not have a large share of CDM projects, and are not dominating the CDM market share, are usually unilateral projects.[665] See Figure 5.6 below.

Figure 5.6: Percentage of Unilateral and Annex I Rejected Projects



[665] Countries such as Bolivia, Sri Lanka, Guatemala, Honduras, Philippines, Republic of Macedonia,

More recent rejected projects were not assessed for this thesis. This is because the author decided that additional assessment of rejected projects will not significantly improve the conclusions made in this thesis. A pilot study of recent rejected projects on the UNFCCC's website indicated that projects were still rejected for the same reasons presented in Section 5.4 below.

(c) Methodology for Analysis of Registered and Rejected Projects[666]

For the assessment of registered projects, this chapter examines the PDD of each selected project and determines how the requirements have been fulfilled. The issue of - *how* the requirements have been fulfilled - is examined in only 4 of the 6 requirements, namely, confirmation of sustainable development contribution, stakeholder participation, environmental analysis and EIA, and in the case of the requirement for baseline and monitoring methodology, this requirement is assessed and analysed for whether, in addition to monitoring the emission reductions achieved, CDM projects assessed in this study will also monitor the sustainable development indicators of the projects. For the following reasons, the additionality test is not assessed for *how* it has been fulfilled: (a) it involves technical and complex issues that require specialist knowledge to effectively assess and analyse; (b) although it will contribute to sustainable development in a global context through the reduction and avoidance of GHGs in the atmosphere, it is not considered a tool that will necessarily promote sustainable development in the host country; and (c) the data required to analyse it is often not available publicly. Furthermore, the information and the data used to prove the additionality of CDM projects has been criticised as being highly subjective, unsubstantiated and difficult to replicate independently.[667] In any case, as explained in

[666] Relevant information of all projects, both registered and rejected projects, is available on the UNFCCC website under 'Project activities' http://cdm.unfccc.int/Projects/index.html (UNFCCC Website, 16/6/2011).
[667] L. Schneider, 'Assessing the additionality of CDM projects: practical experiences and lessons learned' (2009) 9 *Climate Policy* 242 at pg. 250.

Chapter 3, these requirements are not part of the tools for achieving sustainable development and, therefore, not analysing them does not detract from the value of the analysis conducted in this chapter.

As stated in Chapter 1, the analysis made herein is based on the information contained in the PDD only. This is because the pilot study indicated that it was not necessary to analyse the validation report of the DOE for the following reasons: the validation report of the DOE basically echoes what is reported in the PDD and it does not contain additional information that will enhance the analysis made herein; as discussed in Chapter 3, the DOE does not have the requisite authority to validate the adequacy of the fulfilment and implementation of the V & R requirements that are tools for promoting sustainable development; and the DOE can only check whether these have been fulfilled and implemented and not *how*.

For rejected projects, this chapter examines the EB's decision to reject a proposed CDM project's application for registration. The purpose of this is to come to a conclusion on the extent to which the EB is supervising the V & R requirements that are tools for promoting sustainable development in CDM host countries. The assessments of the registered and rejected projects are set out in Appendix 3 of this thesis and the analyses derived from the assessments are set out below. The analysis highlights differences and similarities in host country approaches, sectoral scope differences and similarities, innovative practices of host countries, and CDM projects with commendable practices.

5.3. Fulfilment and Implementation of Validation and Registration Requirements - Analysis of Registered CDM Projects

The V & R requirements that are generally regarded as tools for promoting sustainable

development will not promote sustainable development in the CDM unless they are effectively fulfilled, implemented and supervised.[668] Therefore, this section analyses the fulfilment and implementation of the V & R requirements to determine whether and how this will enhance the sustainable development objective of the CDM. The analyses are set out below according to the requirements being analysed.

5.3.1 Written Confirmation of Sustainable Development Contribution of CDM Project

The participation requirements consist of: ratification of the Kyoto Protocol; establishment of a DNA; confirmation of voluntary participation and written confirmation by the host Party DNA that the proposed CDM project assists it in achieving sustainable development.[669] Only the requirement for written confirmation of sustainable development will be analysed in this section. This is because the requirement for ratification and DNA establishment are basic requirements that must be fulfilled once by all countries before they can participate in the CDM. To facilitate an analysis of this requirement, the host countries' LoAs are assessed.[670]

From the analysis, there is little evidence from the LoAs assessed that host countries give serious consideration to the sustainable development contributions of the projects they approve. This is because CDM host countries have adopted a catch-all, vague and standard confirmation that projects assist them in achieving sustainable development. The LoAs usually contain a standard statement by the DNA confirming that the project contributes to sustainable development. There are no details provided of the sustainability criteria used by the host country to come to the conclusion that the project will contribute to sustainable development. Furthermore, host countries have little incentive to require strong sustainability

[668] See the discussions in Chapters 1 and 3.
[669] See Decision 3/CMP.1, Annex, Paragraphs 37(a), 28-30, and 40(a).
[670] The LoAs issued by the Parties involved in the proposed CDM projects are usually found on the UNFCCC website.

criteria that could dampen investment.[671] Therefore, the host country's assessment is usually perfunctory.

For instance, the LoA of 'Rio Blanco Small Hydroelectric Project' simply stated that the project will assist Guatemala in achieving sustainable development, and nothing else.[672] As with most of the other LoAs assessed, there is no indication of the criteria and the indicators with which proposed CDM projects were assessed, to arrive at this conclusion. As discussed in Chapter 3, there are no guidelines on the content of such LoA and means of proving that the project contributes to the host country's sustainable development and the criteria that were used to arrive at that conclusion. Project participants are, more likely than not, unsure of the sustainable development criteria which the DNA uses to assess and confirm project contribution to sustainable development. It seems this is one of the reasons why project participants keep the section on sustainable development in the PDD very vague.[673] This will affect validation of this requirement by the DOE; because there are no defined criteria from the DNA and guidelines from the CDM rules, the DOE will invariably validate and confirm that the project will assist the host country in achieving sustainable development, irrespective of whether the project does or not.

Therefore, there are two issues for analysis here: (a) do robust approval procedures contribute in more and varied ways to sustainable development in those countries than projects hosted in countries without such robust procedures? and (b) how do the CDM projects assessed in this thesis contribute to sustainable development in CDM host countries? These issues will be

[671] This is discussed in Chapter 4, Section 4.2.6.
[672] CDM Project reference 0028 available at http://cdm.unfccc.int/filestorage/8/Q/4/8Q4Z6F7HN6X9RJ1UDIODKDA1HXRZ77.1/LoA_Guatemala_Candelaria.pdf?t=eG58bTYwbjJjfDC7w5cK3yTXMUn-lEX4cRDp
[673] See the following discussion on the assessment of PDDs for sustainable development contributions. Also see Section 5.5 below on the approval procedure of select DNAs.

discussed below. This thesis recognises that the discussion of these two questions is not strictly relevant for the analysis of the fulfilment and the implementation of the V & R requirements made in this chapter, however, they become relevant because the answers to the two questions justify the recommendations made in Chapters 3 and 6 for minimum standards and guidelines for the V& R requirements.

(a) (i) Do CDM Projects in Host Countries with Robust Approval Procedures Contribute in More and Varied Ways to Sustainable Development in those Countries than Projects Hosted in Countries without such Robust Procedures?

The participation requirement presupposes that host country DNAs will establish CDM project approval procedure, including defining sustainable development criteria for proposed CDM projects. On the face of it, this is logical because it is the host country that will benefit from projects that promote its sustainable development objectives, and suffer from unsustainable projects. Therefore, the sustainable development contributions of CDM projects should align with the host countries' defined sustainable development criteria.[674] This section will examine the CDM approval procedures of China, Brazil and India. It discusses the approval procedures used in these countries and determines whether the procedures promote sustainable development in these countries. This analysis will allow conclusions to be reached on whether robust approval procedures, for proposed CDM projects, will promote sustainable development in CDM host countries. The basis for the comparison of the approval procedures of these three countries is that they have the largest number of projects assessed and analysed for this study[675] and they are presently dominating the UNFCCC CDM project pipeline. Furthermore, this study chose to analyse China because

[674] S. Thorne and E. La Rovere, 'Criteria and indicators for appraising Clean Development Mechanism (CDM) projects,' http://www.helio-international.org/Indicators.CDM%20projects.pdf , 1. (Helio International Website, 20/5/ 2011).
[675] See Figure 5.1 above.

of its discriminatory tax scheme. Brazil was selected because of the additional standards and guidance it established for the fulfilment of those V & R requirements that will promote sustainable development in CDM host countries. India was selected in order to compare its approval procedure with China and Brazil.

CDM Approval Process in China

China has a structured institutional framework for the governance and implementation of CDM projects. China's 'National Climate Change Programme' outlines its objectives, basic principles, key areas of action, as well as policies and measures to address climate change.[676] The main law governing the approval process for CDM projects in China is the 'Measures for Operation and Management of Clean Development Mechanism Projects in China' (China CDM Measures), which sets out the rules, measures for CDM project implementation, and the national agencies responsible for CDM project activities in China.[677] The National Coordination Committee on Climate Change (the Committee) is at the head of the structure and is responsible for reviewing national CDM policies, rules and standards, approving members of the Board, and reviewing other CDM issues that it deems necessary.[678] A National CDM Project Board (the Board) is also instituted under the Committee.[679] The responsibilities of the Board include, *inter alia*, reviewing the following aspects of proposed CDM projects: participation requirement; baseline methodology and emission reductions;

[676] China's National Climate Change Programme, http://www.ccchina.gov.cn/WebSite/CCChina/UpFile/File188.pdf . (China Climate Change Info-Net Website, 15/6/ 2009). The programme outlines objectives, basic principles and key areas of action to address climate change up to 2010. Energy production and transformation is China's number one key area for GHG mitigation.
[677] See 'Measures for Operation and Management of Clean Development Mechanism Projects in China,' http://cdm.ccchina.gov.cn/english/NewsInfo.asp?NewsId=905 . (China Climate Change Info-Net Website, 15/6/ 2009), hereinafter referred to as China CDM Measures. The law replaces the former 'Interim Measures for Operation and Management of Clean Development Mechanism Projects in China'.
[678] China CDM Measures, Article 14.
[679] Ibid. Article 13. The National Development and Reform Commission (NDRC) and Ministry of Science and Technology (MOST) both serve as co-chairs of the Board, the Ministry of Foreign Affairs (MFA) serves as the vice chair of the Board, other Board members are the State Environmental Protection Administration, China Meteorological Administration, Ministry of Finance, and Ministry of Agriculture. See Article 15 *Ibid.*

price of CERs; funding of the proposed project and technology transfer; crediting period; monitoring plan; and the sustainable development effectiveness of proposed CDM projects in China.[680] The National Development and Reform Commission (NDRC) is a member of the Board and it also serves as the appointed DNA of China.[681] Its responsibilities are to: receive CDM project applications; approve CDM projects jointly with the Ministry of Science and Technology (MOST) and the Ministry of Foreign Affairs (MFA); issue LoAs on behalf of the Government of China; and supervise implementation of CDM project activities.[682]

There is a clear procedure for approving CDM projects. The approval procedure in China consists of the following 5 steps: project participants submit required documents to the NDRC; the NDRC invites independent experts to review the documents and provide their comments; the National CDM Board also reviews the application documents and makes its decision accordingly; based on the recommendations of both review processes, the NDRC approves or rejects the application in accordance with the decision made by the National CDM Board, and issue the LoA on behalf of the Chinese Government to the applicant.

The institutional structure and approval process established for the approval of proposed CDM projects in China allows for checks and balances between the Committee and the Board in the approval of proposed CDM projects. For example, both the Committee and the Board review proposed CDM projects independently of each other. The dual examination of proposed CDM projects ensures that proposed projects are considered for their sustainable development benefits. In addition, because the Board is composed of different agencies with various professional experiences and skills, the approval process will benefit from the varied

[680] *Ibid.*
[681] *Ibid*. Article 16.
[682] *Ibid.*

experience of the Board members. Furthermore, the different agencies have defined roles and responsibilities, albeit there may be instances of overlap in duties.[683] As noted earlier and discussed in the following section, CDM host countries can introduce additional national measures to ensure that CDM projects contribute to their sustainable development objectives.[684]

Measures to Ensure Sustainable Development Contribution of Proposed CDM Projects

China has defined its development priority areas as energy efficiency, renewable energies, and methane capture and utilisation, to act as a guide to CDM project developers and to steer CDM projects towards those areas in order to promote its sustainable development. Article 4 of China's CDM Measures states that "[t]he priority areas for CDM projects in China are energy efficiency improvement, development and utilization of new and renewable energy, and methane recovery and utilization." In addition, Article 10 stipulates that proposed CDM projects should promote the transfer of EST to China.

To ensure that it attracts CDM projects to its defined priority areas, China established a discriminatory taxation scheme for different types of CDM projects. Article 24 of China's CDM Measures establishes the taxation scheme on the proceeds of CERs from CDM projects. The scheme is discretionary because the taxation rate levied on CERs varies according to the relevance of the project to China's defined priority areas.[685] The tax rate levied on CERs ranges from 2% for projects in the priority areas of energy efficiency, renewable energies and methane capture and utilisation, 30% for N_2O projects and as much

[683] *Ibid.* Articles 14, 15 and 16.
[684] Z. Zhang *et al*., 'Toward an effective implementation of Clean Development Mechanism projects in China' (2006) 34 *Energy Policy* 3691 at pg. 3696.
[685] E. Lehman and A. Nobili, 'Clean Development Mechanism projects in China: a brief guide,' http://www.lehmanlaw.com/fileadmin/lehmanlaw_com/Publications/clean_development_mechanism_projects_in_china-a_brief_guide.pdf , 3. (Lehman, Lee & Xu Website, 26 /11/ 2009).

as 65% for HFC and PFC projects.[686] The differences in the tax levied on CDM projects reflects China's strategy to encourage the implementation of CDM projects that contribute most significantly to its sustainable development priorities.[687]

The Chinese CDM policy rewards projects that contribute to its developmental priorities through lower taxes and tax breaks, and penalises those that do not, through higher taxes and levies. Therefore, although it hosts HFC and PFC projects, it places a higher tax on their CER proceeds because they do not fall within its priority areas for sustainable development. The revenue generated by the Government constitutes a special fund used to support sustainable development in China.[688] However, this obvious discrimination has not discouraged investors from investing in CDM projects in China. China is possibly the only CDM host country that has successfully screened CDM projects against its defined sustainable development strategy.[689]

Furthermore, China does not define its sustainable development priorities along the lines of social, economic and environmental components of sustainable development. Rather, the CDM projects are evaluated on the basis of their alignment with the areas defined as priority areas for sustainable development; energy efficiency improvement, development and utilisation of new and renewable energy, and methane recovery and utilisation.[690] According to a 2009 EU-China CDM Facilitation Project Report, hydropower, energy efficiency and

[686] China CDM Measures, Article 24.
[687] Lehman and Nobili, 'Clean Development Mechanism projects in China: a brief guide,' 3.
[688] Ibid.
[689] Chapter 18 of China's National Sustainable Development Strategy (NSDS) sets out China's strategy for the protection of the atmosphere and controlling greenhouse gas emissions. The strategy states that "[t]o realise its energy development plan, China will actively seek investment from the international community for projects which assist in the slowing of climate changes. These include projects for coal-fired power plants, hydroelectric power stations, coal gas projects, coal methane utilization and tree planting." Paragraph 18.38.
[690] Article 4 of China CDM Measures.

wind power represent the majority of China's CDM projects to date.[691] This is an indication that China's use of CDM projects to promote its sustainable development strategy has been successful.

CDM Approval Process in Brazil

The Interministerial Commission on Global Climate Change (CIMGC) acts as the Brazilian DNA.[692] For the approval of CDM projects, the Brazilian DNA produced a 'Manual for Submitting CDM Project Activities to the Interministerial Commission on Global Climate Change aimed at obtaining a Letter of Approval from the Brazilian Government' (Manual).[693] The Manual brings together, in a single document, the standard for CDM project approval in Brazil. It facilitates the submission of CDM projects in Brazil, and provides minimum standards and guidelines to guide project participants in the fulfilment of the V & R requirements, especially those requirements that are regarded as tools for promoting sustainable development, such as stakeholder participation. For example, the Manual provides a format of the letter of invitation with which stakeholders to a proposed CDM project should be invited for stakeholder consultation.[694] Furthermore, the format lists specific information that should be included in the letter of invitation, such as the name and type of project and the proposed project's contribution to sustainable development.[695] In addition, the Manual makes provision for stakeholders who lack internet access to request in

[691] See EU-China CDM Facilitation Project, http://www.euchina-cdm.org/media/docs/EU-China%20CDM%20Policy%20Brief%20Aug%2009.pdf , 2. (EU-China CDM Facilitation Project Website, 31/5/ 2011). See also S. Ganapati and L. Liu, (2009), 55.
[692] See the Ministry of Science and Technology website, http://www.mct.gov.br/index.php/content/view/37146.html . (Ministry of Science and Technology Website, 15/6/ 2011). See also P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues*, 22.
[693]See the Ministry of Science and Technology website, http://www.mct.gov.br/index.php/content/view/37146.html , 1-36. (Ministry of Science and Technology Website, 15/6/ 2011).
[694] Ibid. at 19 (Section 2.4).
[695] Ibid. at 22.

writing a printed copy of the PDD and other attached documents from the project participants.[696]

The Manual also provides guidance to project participants on relevant stakeholders. For instance, it provides a minimum list of relevant stakeholders that should be invited to comment on proposed CDM projects in Brazil.[697] The Manual provides that, as a minimum, the letters of invitation should be sent to the following stakeholders: city hall of each town involved in the proposed CDM project; the city council of each town involved in the proposed CDM project; state environmental body; municipal environmental bodies; Brazilian NGO Forum and Social Movements for the Environment and Development; community associations whose purposes are directly or indirectly related to the proposed project; Attorney General of the State involved or the Attorney General for the Federal District and Territories; and the Federal Attorney General.[698] In addition, the Manual seeks to ensure that proposed CDM projects comply with environmental and labour legislation in force in the country, through a declaration of compliance signed by national project participants.[699] The DNA in Brazil will issue a LoA once it is satisfied that the proposed CDM project contributes towards Brazil's sustainable development. Otherwise, the proposed project activity can be placed under review or it may be approved with conditions.[700]

Measures to Ensure the Sustainable Development Contribution of Proposed CDM Projects

Brazil defines five sustainable development criteria for proposed CDM projects. The five criteria for assessing proposed CDM projects in Brazil are local environmental sustainability,

[696] Ibid. at 23 (Section 2.4).
[697] Ibid. at 19 (Section 2.4).
[698] Ibid. at 19-20 (Section 2.4).
[699] Ibid. at 26-27.
[700] Ibid. at 18. (Section 2.3).

net job creation, income distribution, training and technological development, and regional integration and articulation with other sectors.[701] The Manual specifically states that "[i]t is important to emphasise the contributions that can indeed be attributed to implementation of project activity, clearly separating them from other possible benefits. …It is worthwhile noting that reductions in greenhouse gas emissions do not configure a contribution to local, but to global, environmental sustainability."[702] The Manual further provides that it is not compulsory for the proposed project to fulfill all the above-stated criteria, and it recognises that the sustainable development contributions of CDM projects vary according to the sectoral scope of each project activity.[703]

CDM Approval Process in India

The National Clean Development Mechanism Authority (National CDM Authority) is the DNA in India.[704] The DNA is hosted by the Ministry of Environment and Forests (MoEF). There are several government agencies responsible for CDM project approval in India. The Secretary of the MoEF acts as the chairperson of the DNA, other members of the National CDM Authority include the Foreign Secretary, Finance Minister, Secretary of Non-Conventional Energy Sources, Secretary of Industrial Policy and Promotion, Secretary of the Ministry of Power, Secretary of the Ministry of Planning Commission or their nominees.[705]

The National CDM Authority receives proposed CDM projects for approval.[706] Before a proposed project is issued a LoA, the National CDM Authority reviews proposed CDM

[701] Ibid. at 18 (Section 2.3).
[702] Ibid.
[703] Ibid.
[704] Information on CDM approval procedure I India is available at the Ministry of Environment and Forest (MoEF) website http://envfor.nic.in/cdm/cdm_india.htm . (6/2/2011).
[705] Ibid. Also see Ganapati and Liu, (2009), 49.
[706] See 'Host country approval', http://envfor.nic.in/cdm/host_approval_process.htm (MoEF Website, 6/2/2011).

projects to ascertain if it fulfils the sustainable development objectives of India[707] and the likelihood that it would be successfully implemented.[708] During the review of proposed CDM projects, the National CDM Authority can invite officials and experts from government, financial institutions, consultancy organisations, non-governmental organisations, civil society, legal profession, industry and commerce, as it may deem necessary, for technical or professional advice on proposed CDM projects.[709] To further evaluate proposed CDM projects, project participants are required to make a presentation to the authority.[710] The National CDM Authority can recommend additional requirements to ensure that a proposed CDM project meets its sustainable development objectives and complies with the national legal framework.[711]

Measures to Ensure Sustainable Development Contribution of Proposed CDM Projects

India defines its sustainable development criteria for CDM projects as social well-being, environmental well-being, technological well-being and economic well-being.[712] The DNA considers proposed CDM projects as contributing to India's social well-being if it alleviates poverty, creates additional employment, removes social disparities and contributes to the provision of basic amenities to the people. Project contributes to economic well-being if it creates additional investment consistent with the needs of the people, and it contributes to environmental well-being if it positively impacts on resource sustainability, biodiversity, human health and reduces the levels of pollution in general. Technological well-being is defined as transfer of EST that is comparable to best practices globally, within the country as

[707] This is discussed in the following paragraph.
[708] See the MoEF website, http://envfor.nic.in/cdm/cdm_india.htm . (MoEF Website, 6/2/2011).
[709] See http://envfor.nic.in/cdm/cdm_india.htm . (MoE Website, 6/2/2011).
[710] Ibid.
[711] Ibid.
[712] See 'Eligibility criteria', http://envfor.nic.in/cdm/host_approval_criteria.htm . (MoEF Website, 6/2/2011).

well from other developing countries.[713]

Analysis of China, Brazil and India's Efforts to ensure that Proposed CDM Projects assist them in Achieving Sustainable Development

Given that defining and implementing sustainable development, in national and international law, is challenging,[714] the three countries define the sustainable development criteria for proposed CDM projects differently. However, the procedure adopted by China appears to be the most effective at ensuring that CDM projects contribute to its defined sustainable development objectives and goals. Although China's taxation method might be criticised for being discriminatory, the reality is the reverse and China currently has over 45% of the total number of registered CDM projects in the UNFCCC project database,[715] and 20% of the projects assessed in this thesis are implemented in China.[716] Therefore, China's discrimination between CDM projects has not deterred investors. In fact, China has been able to use the CDM as a vehicle to promote its sustainable development priorities. By contrast, CDM host countries in Africa, who have minimal sustainable development criteria and additional requirements[717] that could dampen investment, have less than 2% of the total number of registered CDM projects in the UNFCCC project database.[718] This suggests that investors are not discouraged by rules and regulations, on the contrary, rules and regulation encourages investment confidence. Huq and Reid have attributed this to the fact that "…regulation and transparency lower the risk to the investors, and increase the likelihood

[713] Ibid.
[714] See Chapter 3.
[715] See 'Registered project activity by host party', http://cdm.unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html . (UNFCCC Website, 2/6/ 2011).
[716] See Section 6.2 above.
[717] S. Lutzeyer 'Climate trading: the Clean Development Mechanism and Africa' (2008) 12 Stellenbosch Economic Working Papers 1, 27. Also see Chapter 3, Table 3.1.
[718] See 'Registered projects by region', http://cdm.unfccc.int/Statistics/Registration/RegisteredProjByRegionPieChart.html . (UNFCCC Website, 2/6/2011).

that investments will have benefits that will last longer than the current policy maker's term of office.[719]

Brazil's guidance provides added value by supplementing the CDM rules with minimum standards and guidelines for fulfilling those V & R requirements that will promote sustainable development. Furthermore, the approval process clearly sets out what is expected from project participants to fulfil the V & R requirements for CDM projects, such as conducting stakeholder participation. However, Brazil does not have priority areas for assessing the sustainable development contribution of proposed CDM projects. For instance, Brazil defines its sustainable development priorities broadly and they correspond with the generally accepted economic, environment, social and technological development pillars of sustainable development, without providing indicators for assessing these criteria. Also, India's definition of its sustainable development criteria for proposed CDM projects is similar to Brazil's. The dangers of adopting broad sustainable development goals is that, it is most likely that, virtually all proposed CDM projects will fit within Brazil and India's broad sustainable development criteria.[720]

Unlike Brazil, India's approval process does not provide additional guidance for fulfilling those V & R requirements that will promote sustainable development. As discussed later in this chapter, the result is that fulfilment of the V & R requirements for promoting sustainable development are inconsistent and vary significantly between projects, leading to an ad-hoc approach by project participants in India. Like Brazil, India's defined sustainable development criteria for approving proposed CDM projects is broad and unlikely to achieve

[719] S. Huq and H Reid, 'Benefit sharing under the Clean Development Mechanism' in D. Freestone and C Streck (eds) *Legal Aspects of Implementing the Kyoto Protocol Mechanisms: Making Kyoto Work* (Oxford: Oxford University Press, 2005), 230 at pg. 246.
[720] S. Ganapati and L. Liu (2009) 54-55.

the success that China has, in directing CDM projects towards its development priorities. Furthermore, although the approval process for proposed CDM projects in India states that the DNA, in approving projects, will seek to prioritise projects in accordance with national priorities, it is unclear how the DNA does this in India. Such broad sustainable development priorities may be perceived to boost the volume of CDM projects implemented in these countries, but the result is that of the three approval procedures, China and Brail are most likely to be successful at promoting the countries' sustainable development. The strategy adopted by India seems weak and unlikely to steer CDM projects towards priority areas that are necessary to achieve sustainable development in both countries.

In establishing additional approval procedures and requirements that will promote their sustainable development, host countries have to be mindful of their obligations under international and regional treaties and agreements. For example, one of the fundamental principles of the World Trade Organisation (WTO) trading system is the principle of 'national treatment' which states that imported and locally-produced goods and services should be treated equally. This principle of 'national treatment 'of giving others the same treatment as one's own nationals is also found in all the three main WTO agreements.[721] While China's approach of guiding CDM projects towards its defined priority areas is commendable, its discriminatory tax system is a breach of its obligations under international trade rules such as the WTO.

To ensure that proposed CDM projects contribute to sustainable development in host countries, two things are essential; a structured approval procedure for assessing and

[721] See Article 3 of General Agreement on Trade and Tariffs (GATT), Article 17 of General Agreement on Trade in Services. Available at https://www.wto.org/english/docs_e/legal_e/06-gatt_e.htm (WTO Website, 16/5/2012).

approving CDM projects and defined sustainable development criteria, indicators and parameters for assessing the sustainable development impact of proposed projects. However, this is not the norm with host countries and this obviously limits the capacity of their DNAs to select and address specific sustainable development objectives and it makes the following analysis difficult.

(a)(ii) How Do the CDM Projects Assessed in this Thesis Contribute to Sustainable Development in CDM Host Countries?

The analysis revealed that predictably, the sustainable development benefits of CDM projects vary from project to project. Analysis of the sustainable development claims made in the PDDs shows that the most prevalent sustainable development benefits in the PDDs assessed are transfer of technology, employment generation, improved air quality, and what is referred to here as direct benefits.[722] Consequently, the analysis below is based on these. Note that the analysis made here is based on the sustainable development claims contained in the PDDs. The claims are impossible to verify because the CDM rules do not require monitoring of sustainable development contributions during the implementation of the project. Although there is no requirement to demonstrate how projects contribute to sustainable development, project participants usually include the sustainable development contributions of the project in the section describing the proposed project.[723] 97 of the PDDs assessed describe how the projects will contribute to the host country sustainable development. The other 3 projects did not mention sustainable development at all in their PDDs.[724]

[722] Equally, in Olsen and Fenhann's assessment of 744 PDDs in 2006 for their sustainable development contributions, the most common sustainable development claims of the CDM projects were: employment generation; economic growth; a better quality of air; access to energy; and welfare improvements. See Olsen and Fenhann, (2008), 2829.

[723] The sustainable development contribution is usually described in section A.2 of the PDD.

[724] The CDM projects are as follows: CDM project reference 0492 (sectoral scope 1); 'Catalytic N2O destruction project in the tail gas of three Nitric Acid Plants at Hu-Chems Fine Chemical Corp,' CDM project reference 0765 (sectoral scope 5); and 'Pansan Coal Mine Methane Utilisation and Destruction Project,' CDM project reference 0840 (sectoral scope 8).

(i) Technology Transfer

The CDM does not have an explicit technology transfer mandate compared to its sustainable development mandate. However, Paragraph 34.7 of Agenda 21 establishes that technology transfer is an essential requirement for sustainable development.[725] The Intergovernmental Panel on Climate Change (IPCC) defines technology transfer as

> A broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholders such as governments, private sector entities, financial institutions, NGOs and research/education institutions. It comprises the process of learning to understand, utilize, and replicate the technology, including the capacity to choose it and adapt it to local conditions and integrate it with indigenous technologies.[726]

In addition, Andersen *et al.* state that "[t]echnology transfer is the intentional 'passing on' of technology or know-how from one party to another, commonly by purchase, investment or agreements for cooperation."[727] Information about technology transfer in the CDM projects assessed has been collated from the PDDs.[728] 53 of the projects claim to have transferred

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[725]See Agenda 21 UN Doc A/Conf.151/26 (1992). Also see United Nations, *Indicators of Sustainable Development: Guidelines and Methodologies*, 3rd edn. (New York: UN Sales Publication No. E.08.11.A.2, October 2007). In addition to Agenda 21, technology transfer is included in over 80 international and regional agreements including, the Convention on Biological Diversity (CBD), and the United Nations Convention to Combat Desertification (CCD).

[726] B. Metz *et al*. (eds.), *Methodological and Technological Issues in Technology Transfer* (Cambridge: Cambridge University Press, 2000), 15-16. On technology transfer generally, see: Wilkins, *Technology Transfer for Renewable Energy: Overcoming Barriers in Developing Counties*; Andersen *et al*., *Technology Transfer for the Ozone Layer: Lessons for Climate Change*. See also Article 10(c) of the Kyoto Protocol and Articles 4(1)(c), 4(3) and 4(5) of the UNFCCC.

[727] S. Andersen *et al., Technology Transfer for the Ozone Layer: Lessons for Climate Change* (London: Earthscan: 2007), 5 Also, Wilkins defines technology transfer "as the diffusion and adoption of new technical equipment practices and know-how between actors (e.g. private sector, government sector, finance institutions, NGOs, research bodies, etc.) within a region or from one region to another" G. Wilkins, *Technology Transfer for Renewable Energy: Overcoming Barriers in Developing Counties*, (London: The Royal Institute of International Affairs, 2002), 43.

[728] Statements relating to technology transfer are usually found in sections A.2, or A.4.3 of the PDD. Although for some of the projects assessed, the fact that the CDM project involved transfer of technology was not stated at the appropriate section, it became necessary to search for the term throughout the PDD to ascertain if there was

technology to CDM host countries, although it was difficult to certify if these are ESTs. Furthermore, the analysis of the PDDs indicates that when a CDM project claims to have involved transfer of technology to the host country, the practice of 'transfer of technology' is usually interpreted by project participants to mean the supply and installation of imported equipment, and the import of equipment and training of local staff in the use and maintenance of the imported equipment. When analysed further, 20 of the projects involved the transfer (import) of equipment[729] and 33 of the projects involved the transfer of equipment and training of local staff in the use and maintenance of the imported equipment.[730] For example, while 'HFC23 Decomposition Project of Zhejiang Juhua Ltd, China' states that the project will install a set of preheated steam decomposition facility which is imported from Japan,[731] 'Factory energy efficiency improvement in compressed air demand and supply in Malaysia' states that although the technologies to be adopted for the project require high and special skills to be implemented properly, the local employees will be trained by the annex I project participant, in the proper utilisation and operation of the equipment.[732]

Technology transfer claims vary across the sectoral scopes and the analysis made herein indicates that some variables affect transfer of technology in the CDM. Transfer of technology in the CDM is greatly influenced by whether a project is unilateral, or Annex I

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transfer of technology or not. See CDM project reference: 0616 (sectoral scope 13); 0379 (sectoral scope 15); 0499 (Sectoral scope 11); and 0197 (sectoral scope 15).

[729] CDM project reference: 0028, 0194, 0606, and 0771 (sectoral scope 1); 0123, 0160, 0159 and 0173 (sectoral scope 3); 0116, 0490, 0765, and 0099 (sectoral scope 5); 1027 (sectoral scope 9); 0193, 0232, 0151, 0001, and 0767 (sectoral scope 11); 0048 (sectoral scope 13); and 0401 (sectoral scope 15).

[730] CDM project reference: 0045, 0078, 0717, and 0492 (sectoral scope 1); 1372 , 0677 and 0832 (sectoral scope 3); 1186 and 0247 (sectoral scope 4); 0557, 0837, 0752, 0922, 0698 and 0961 (sectoral scope 5); 0902 and 0892 (sectoral scope 8); 0153, 0152, 0605 and 0553 (sectoral scope 10); 0003, 0115, 0011, 0306, 0550, 0499, and 0868 (sectoral scope 11); 0503, 0008 and 0908 (sectoral scope 13); and 0105 and 0120 (sectoral scope 15.

[731] CDM reference 0193, available at http://cdm.unfccc.int/filestorage/E/5/Z/E5ZHNT07RRDV0RH4ESDSKDNIJS12S0/JUHUA_HFC23_PDD_ENG051123%20without%20first%20page%20and%20track%20changes.pdf?t=czJ8bTYyaXdkfDAkjQeAJANpi7f2y4MHecmZ , 2.

[732] CDM reference 1372, available at http://cdm.unfccc.int/filestorage/B/4/W/B4WKR9FSS4EP6LNTDTXTWNCJ8EF18A/SSCPDD-DENSO.pdf?t=dHh8bTYyamtmfDC2hlJED7qLnyMl1kpdg2Cz, 3.

sponsored. Obviously, CDM projects with Annex I participants are more likely to claim transfer of technology to the host country than a unilateral CDM project activity.[733] 49 of the 83 Annex I-sponsored projects claimed transfer of technology, while only 4 of the 17 unilateral projects claimed transfer of technology.[734] For example, 'Cuyamapa Hydroelectric Project,' and 'Cortecito and San Carlos Hydroelectric Project,' are both registered in sectoral scope 1 and implemented in Honduras.[735] While the former project, an Annex I sponsored project claimed to involve transfer of technology, the latter project based in the same country and registered under the same sectoral scope is a unilateral project with no transfer of technology.

Generally, transfer of technology is not common in unilateral projects. However, unilateral projects that claim transfer of technology are usually described as 'first of its kind' test cases in the host countries.[736] For example, although 'Landfill Gas Extraction and Utilization at the Matuail landfill site, Dhaka, Bangladesh' is a unilateral project, it claims to be a test case in Bangladesh that will be closely monitored by other dumpsite/landfill owners. The project claims transfer of technology through the involvement of foreign expertise and training consultants from Netherlands for the initial stages of the project.[737] Similarly, 'Santa Cruz landfill gas combustion project,' a unilateral project in Bolivia, claims transfer of gas extraction flaring technology and waste management principles.[738] The PDD claims that the

[733] S. Seres and E. Haites, 'Analysis of technology transfer in CDM projects', 18.
[734] CDM project reference: 0078 (sectoral scope 1); 0832 (sectoral scope 3); and 0048 and 0908 (sectoral scope 13).
[735] CDM project reference 0045 and 0051, http://cdm.unfccc.int/Projects/DB/DNV-CUK1110827392.89 and http://cdm.unfccc.int/Projects/DB/DNV-CUK1114669200.15 respectively. (http://cdm.unfccc.int/Projects/projsearch.html (UNFCCC Website, 20/11/2010).
[736] CDM project reference 0078 (Bangladesh), 0895 (India) sectoral scope 1, 0832 (India) sectoral scope 3, 0496 (India) sectoral scope 10, 0048 (Bolivia), 0908 (Tanzania) sectoral scope 13 and 0945 (India) sectoral scope 15.
[737] CDM project reference 0078 (sectoral scope 1). http://cdm.unfccc.int/filestorage/FS_334865036/WWR_CDM_PDD_LFG%20v7_0.pdf?t=RDV8MTI5NTI2NjQ3MS4wOA==|q-QPbNnEoOlJOR3xc3HlINSUPb8=, 3. (UNFCCC Website, 20/11/2010).
[738] CDM project reference 0048 (sectoral scope 13),

gas extraction plant and flare will be manufactured in Europe and shipped to Bolivia for installation.[739] Technology transfer in unilateral projects could be as a result of the capacity building efforts of non-governmental organisations (NGOs), intergovernmental organisations (IGOs), and civil society groups. For example, SouthSouthNorth is an NGO that facilitates capacity-building in developing countries in the area of climate change and social development. One of its projects, a unilateral project, is the first CDM project in Africa and the first Gold Standard project worldwide.[740]

Technology transfer is more likely in some sectoral scopes. This could be due to the fact that certain scopes require highly sophisticated equipment that are not readily available locally and require specialist training. All the projects assessed in sectoral scope 11 claimed transfer of technology to the host country.[741] This could be due to the fact that sectoral scope 11 projects require highly specialised equipment and specialist knowledge.[742] In addition, 11 of the 13 projects assessed in sectoral scope 5 involved transfer of technology.[743] Also, for sectoral scopes 11 and 5, the high number of projects with transfer of technology is probably due to the fact that all the projects in both scopes are Annex I sponsored projects.

Certain technologies are more diffused in developing countries than other technologies. Only 8 of the 16 projects in sectoral scope 1 transferred technology to the host country.[744] Sectoral

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http://cdm.unfccc.int/filestorage/FS_993733516/CDM_PDD_FINAL%20070205.pdf?t=NnB8MTI5NTI3MTE1NC40Mw==|l2cegQPpgmcuT6bY90Lllt3UZXE=, 3. (UNFCCC Website, 17/1/2010).

[739] Ibid. at 5.

[740] See the SouthSouthNorth website at http://www.southsouthnorth.org/ (17/1/2010).

[741] CDM project reference 0193, 0232, 0151, 0001, 0767, 0003, 0115, 0011, 0306, 0550, 0499 and 0868.

[742] Sectoral scope 11 projects involve the capture and destruction of emissions from the production and consumption of halocarbons and sulphur hexafluoride.

[743] CDM project reference 0116, 0490, 0557, 0765, 0698, 0837, 0752, 0922, 0099, 0961, and 1113.

[744] Sectoral scope 1 projects are energy industries such as renewable and non-renewable energy projects while sectoral scope 11 projects involve the capture and destruction of emissions from the production and consumption of halocarbons and sulphur hexafluoride which requires highly specialised equipment and specialist knowledge. See CDM project reference 0028, 0194, 0606, 0771, 0045, 0078, 0717, and 0492. See also

scope 1 projects are renewable and non-renewable energy projects such as biomass, hydroelectric power, wind, and solar energy projects.[745] The technologies for some renewable energy projects, such as hydroelectric power, are widespread in developing countries as a result of capacity building efforts of UN organisations and the World Bank and partly because of the CDM. Therefore it is increasingly difficult for sectoral scope 1 projects to claim transfer of technology. For example, according to the PDD of 'Cortecito and San Carlos Hydroelectric Project,' an Annex I sponsored project, technology was not transferred to the host country because there is previous experience with hydro power technology in Honduras.[746] In addition, sectoral scope 1 projects have the highest percentage in the UNFCCC project pipeline, and they also make up the highest number of the projects assessed in this thesis. Therefore, the technologies deployed in this sector will often be readily available in CDM host countries.

Technology transfer is poor in some sectoral scopes as a result of prevailing circumstances in host countries. CDM projects registered in sectoral scope 4 (manufacturing industries) and sectoral scope 8 (mining and mineral production) reported little transfer of technology. For example, only 2 of the 10 CDM projects assessed in sectoral scope 4[747] and only 2 of the 7 projects assessed in sectoral scope 8[748] claimed to have transferred technology to the host

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S. Seres and E. Haites, 'Analysis of technology transfer in CDM projects', 18.

[745] A. Dechezleprêtre *et al.*, 'Invention and transfer of climate change mitigation technologies on a global scale: a study drawing on patent data' (2008), 24-25. Final report *CERNA Research Programme on Technology Transfer and Climate Change*, http://www.cerna.ensmp.fr/Documents/Invention_and_transfert_of_climate_mitigation_technologies_on_a_global_scale:_a_study_drawing_on_patent_data.pdf (CERNA Website, 11/1/ 2011). However, note that not all renewable and non-renewable energy technologies, such as geothermal energy, are readily available and diffused in developing countries.

[746] CDM Project Reference 0051, http://cdm.unfccc.int/filestorage/B/H/Y/BHYLIMEF2ORJV3641D5XKCU0GP7TWS/Cortecito_Revised%20PDD.pdf?t=MUV8MTMwOTExNzY5Ni43OA==|yu_kHek7rDOc_vZSCsnsAOV4t-w=. (UNFCCC Website, 15/6/2011). See also CDM project reference 0113, 0122, 0253, and 1127 (sectoral scope 1).

[747] CDM project reference 0247 and 1186, both implemented in Malaysia.

[748] CDM project reference 0902, and 0892. (China).

country. Mining is one of the major industries in China and it is more likely that mining technologies will already be prevalent in China, including ESTs.

Technology transfer claims vary across host countries. There is a greater tendency for projects in countries with lower levels of development and with fewer projects in the CDM project pipeline to claim transfer of technology, compared to projects in other developing countries with higher levels of development and a higher share of CDM projects.[749] For instance, the following CDM projects in Guatemala,[750] Pakistan,[751] Vietnam,[752] and Nigeria,[753] all claimed transfer of technology to the host countries. This may be because these projects are the only CDM projects implemented in the host countries at the time of project selection, and as such, they are 'first of its kind' projects. It could also be that these countries each have only one project out of the total number of projects assessed for this thesis. However, where countries classified as economies in transition or newly industrialised economies, such as India, Brazil or China, host a CDM project, an Annex I participant does not guarantee transfer of technology to those countries.[754] This is regardless of the size or the sectoral scope of the projects. Therefore, with the exception of India, Brazil and China,[755] foreign participation positively affects the rate of transfer of technology to CDM host countries.

Overall, India and China have the lowest rate of technology transfer for the projects assessed,

[749] CDM Project reference 0078, 0606 (sectoral scope 1), 0160, 0159, 0173, 1372 (sectoral scope 3), 047, 1186 (sectoral scope 4), 0557 (sectoral scope 5), 0152, 0553 (sectoral scope 10), 0048, 0908 (sectoral scope 13), 0492 (sectoral scope 15).
[750] CDM Project reference 0606 (sectoral scope 1).
[751] CDM Project reference 0557.
[752] CDM Project reference 0152.
[753] CDM Project reference 0553.
[754] CDM project reference 0183, 0361, 0717, 0024 (sectoral scope 4), 0840, 1135, 1230, 1250, 0770 (sectoral scope 8), 0255, 0340 (sectoral scope 3).
[755] CDM Project reference 0113, 0253 (sectoral scope 1), 0255, 0340, 0866 (sectoral scope 3), 0183, 0361, 0717 (sectoral scope 4).

irrespective of sectoral scope, project size or the participation of Annex I entities. Thus, of the 15 Annex 1 CDM projects implemented in India and assessed for this thesis,[756] only 6 transferred technology to India.[757] In China, only 11[758] of the 20[759] projects transferred technology, despite the fact that all 20 projects are Annex I sponsored projects. The low rate of technology transfer can also be a positive indicator of sustainable development. For example 5 of the projects in India claim that the technology utilised has been developed through in-house research and development.[760] This is a commendable effort that will go a long way in promoting sustainable development in India, provided the in-house technology builds on, or is at par, with the environmentally safe technology available worldwide. As developing countries continue on the path to sustainable development, they should rely less on developed countries and adapt and develop technology in-house, through research and development activities. Technologies developed locally have an added advantage of being developed to suit local circumstances. For instance the DNA in India encourages transfer of technology from regional, international and also within the country. This practice will encourage the transfer of technology and knowledge between developing countries, thereby promoting sustainable development.

Technology transfer is important for the CDM because it may facilitate the transfer and utilisation of EST in developing countries, which is essential for achieving sustainable

[756] CDM Project reference: 0113, 0253, and 0717 (sectoral scope 1); 0123, 0255, 0340, 0686, 0677, and 0866 (sectoral scope 3); 0183, and 0361 (sectoral scope 4); 0115, 0001, and 0499 (sectoral scope 11); 0935 (sectoral scope 13).
[757] CDM project reference: 0717 (sectoral scope 1); 0123 and 0677 (sectoral scope 3); 0115, 0001, and 0499 (sectoral scope 11).
[758] CDM project reference 0771, 0837 (sectoral scope 5), 0902, 0892 (sectoral scope 8), 0193, 0232, 0011, 0306, 0550, 0868, and 0767 (sectoral scope 11).
[759] CDM Project reference: 0771, and 1127 (sectoral scope 1); 0837, and 1083 (sectoral scope 5); 0840, 0902, 0892, 1135, 1230, 1250, and 0770 (sectoral scope 8); 0193, 0232, 0011, 0306, 0550, 0868, and 0767(sectoral scope 11); 0547 (sectoral scope 14); and 1301 (sectoral scope 15).
[760] CDM project reference 0361, 0473, 0717, 0847, 1070, 0382, and 0496. Also see CDM Project reference 0698 (sectoral scope 5), a Brazilian CDM project also used emission reduction technology developed in house by the project proponents, although this is not the norm for projects implemented in Brazil.

development and addressing climate change.[761] However, the practice of transfer of technology adopted by the project participants is predominantly the transfer of equipment not previously available in CDM host countries, including training and information necessary to operate the equipment.[762] None of the PDDs assessed in this study transferred commercial information necessary to replicate the technology/equipment in the host country. While this is the ideal means of technology transfer, it faces challenges. For instance, most of the equipment and technology transferred in CDM projects were developed by private commercial companies, with the principal aim of making profits from their innovation and investment. In addition, the issue of patents and intellectual property presents challenges to the diffusion and replication of technologies. Andersen *et al.* attribute the success of the Montreal Protocol in the area of technology transfer to the fact that a significant number of the technologies employed were voluntary transfer of technologies, processes and the introduction of best practices.[763]

To promote sustainable development in the CDM, transfer of technology must result in not just the transfer of the physical equipment, but the knowledge necessary to use that equipment and the development of local knowledge such that the technology can be replicated and used extensively. Furthermore, CDM host countries can play an important role by including technology transfer as one of the conditions for the approval of proposed CDM projects.[764] For instance, transfer of technology is one of the approval criteria used by the

[761] Wilkins, *Technology Transfer for Renewable Energy: Overcoming Barriers in Developing Counties*, 43. See also: J. Sepibus, 'Reforming the Clean Development Mechanism to accelerate technology transfer' (2009) Working Paper No 2009/42 *NCCR Trade Working Papers,* http://phase1.nccr-trade.org/images/stories/publications/IP6/CDM%20and%20technology%20transfer%2020%20october%20finalfinal.pdf . (NCCR Website, 11/1/ 2011).
[762] Recall the definition of transfer of technology by the IPCC.
[763] Andersen *et al.*, *Technology Transfer for the Ozone Layer: Lessons for Climate Change,* 295.
[764] S. Seres and E. Haites, 'Analysis of technology transfer in CDM Projects' (2008), 18. Report prepared for the UNFCCC Registration & Issuance Unit CDM/SDM, http://cdm.unfccc.int/Reference/Reports/TTreport/TTrep08.pdf (UNFCCC Website, 16/3/2011).

DNA in Malaysia when approving proposed CDM projects.[765] The analysis of projects implemented in Malaysia and assessed for this study indicates that all the projects claim transfer of technology to the host country.[766]

Finally, an important caveat to this discussion is that it has not been possible to determine from the information provided in the PDDs the type of technology that was transferred to the CDM host country; whether the transfer of technology facilitates the utilisation of EST. Without this information, it is impossible to determine the extent to which the claims of technology transfer made in the PDDs contribute to sustainable development in the CDM host countries.

(ii) Employment Generation

Host country sustainable development criteria for CDM projects generally include employment generation as one of the indicators of sustainable development in a CDM project.[767] Employment generation is the most common contribution to sustainable development claimed by project participants for this study. 66 of the PDDs claim that employment will be created in CDM host countries as a result of the implementation of CDM projects.[768] 51 of the projects create permanent jobs while 15 create temporary jobs. The

[765] P. Curnow and G. Hodes (eds.), *Implementing CDM Projects: Guidebook to Host Country Legal Issues* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2009), 26.
[766] CDM project reference: 1372 (sectoral scope 3); 0247 and 1186 (sectoral scope 4); 0503 (sectoral scope 13). 4% of the projects assessed are implemented in Malaysia.
[767] See Chapter 2, Section 2.3.3.
http://www.cdmgoldstandard.org/fileadmin/editors/files/6_GS_technical_docs/GSv2.1/Annex_I.pdf . (The Gold Standard Website, 17/3/2011).
[768] CDM project reference: 0028, 0045, 0253, 0194, 0606, 0717, 1127, and 1332 (sectoral scope 1); 0160, 0159, 0173, 0261, 0340, 0079, 0866, and 1188 (sectoral scope 3); 0473, 0876, 0024, and 1186 (sectoral scope 4); 0116, 0490, 0557, 0765, 0837, 0752, 0922, and 0099 (sectoral scope 5); 0672 (sectoral scope 7); 0902, 0892, 1135, 1230, 1250,and 0770 (sectoral scope 8); 1027 (sectoral scope 9); 0153, 0616, 0605, 0879, 1080, and 0553 (sectoral scope 10); 0115, 0193, 0011, 0306, 0550, 0001, 0868, and 0767 (sectoral scope 11); 0032, 0097, 0140, 0197, 0503, 0008, 0935, and 0908 (sectoral scope 13); 0547 (sectoral scope 14); and 0105, 0120, 0401, 0945, and 1301 (sectoral scope 15).

temporary jobs are usually generated during the building and construction stages of the projects. The analysis indicates that there are no distinctions between the sectoral scopes and the 66 PDDs that claim that their projects generate employment are spread through the sectoral scopes. Furthermore, employment generation is not positively or otherwise affected by the sectoral scope of the project or if the proposed CDM project is an Annex I or unilateral CDM project. Moreover, the PDDs are usually silent specific details such as the estimated number of jobs created, and the qualifications and skills required for the jobs created, that is, whether the jobs requires skilled or unskilled labour.

(iii) Other Direct Benefits to Local Communities

To conduct an analysis of this section, the PDDs were assessed for other sustainable development benefits that do not fall under the category of benefits analysed above. This was necessary in order to capture the other sustainable development contributions mentioned in the PDDs that do not fall within the most common ones cited by project participants. Boyd *et al.* consider the 'direct benefits' of a CDM project to be those benefits that arise directly from the project, such as improved air quality, improved quality of life, education, health, water supply, poverty reduction and so on. They also consider 'indirect benefits' to be those that occur where there are no direct benefits for local people, but there is a hypothetical improvement in environmental and social conditions, either globally or locally.[769] This thesis adopts Boyd *et al.*'s definition of 'direct benefits' for the analysis below. Examples of direct benefits include improved air quality, provision of clean water, income generation, access to

[769] E. Boyd *et al.*, 'The Clean Development Mechanism: an assessment of current practice and future approaches for policy' Tyndall Centre for Climate Change Research, Working Paper 114 October 2007, 18. http://www.tyndall.ac.uk/sites/default/files/wp114.pdf (Tyndall Centre for Climate Change Research Website, 8/5/ 2011). Boyd *et al*. assessed ten CDM projects for their environment and development benefits. Their study classified the benefits as 'direct' and 'indirect benefits' that accrue to the host country from CDM projects. See also A. Cosbey *et al*., 'Realizing the development dividend: making the CDM work for developing countries', 3. http://www.iisd.org/pdf/2005/climate_realizing_dividend.pdf (International Institute for Sustainable Development (IISD) Website, 2/1/2011).

healthcare, access to education, skills enhancement, energy provision, energy sufficiency, and infrastructural development.[770]

59 of the CDM projects claim the projects will contribute to improved air quality in CDM host countries.[771] CDM projects improve air quality through improved odour in the atmosphere and reduced air pollutants such as Sulphur Oxides (SOx), Nitrogen Oxides (NOx), suspended particulate matter, non-methane volatile organic compounds, dust, and fly ash. For example, 'AWMS Methane Recovery Project MX06-S-51, Chiapas, México' states in its PDD that the project "… will have positive effects on the local environment by improving air quality (i.e., reducing the emission of Volatile Organic Compounds (VOCs) and odour)…"[772] Furthermore, the projects also link improvement in air quality to health benefits in the local community. For example, 'Kuyasa low-cost urban housing energy upgrade project, Khayelitsha (Cape Town; South Africa)' claims that the proposed project will have significant environmental health benefits on the local community and its residents.[773]

Commendably, 33 of the projects have put in place social programmes that will have positive

[770] K. Begg et al, 'Encouraging CDM energy projects to aid poverty alleviation' Report prepared for the UK Department for International Development (DFID) June 2003, 14. Available at http://www.iesd.dmu.ac.uk/contract_research/publications/kb1.pdf (DFID Website, 4/8/ 2010).
[771] CDM project reference: 0078, 0606, 0717, 0771, and 1127 (sectoral scope 1); 0079, 0123, 0159, 0160, 0173, 0255, 0261, 0340, 0677, 0686, 0832, 0866, and 1188 (sectoral scope 3); 0024, 0473, 0847, and 0876 (sectoral scope 4); 0099, 0116, 0490, 0752,0832, 0961, 1011, 1083, and 1113 (sectoral scope 5); 0672 (sectoral scope 7); 0770, 0840, 0892, 0902, 1230, (sectoral scope 8); 1027 (sectoral scope 9); 0153, 0382, 0496, 0553, 0605, 0616, 0879, and 1080 (sectoral scope 10); 0193 and 0550 (sectoral scope 11); 0032, 0008, 0140, 0197, 0908, and 0935 (sectoral scope 13); 0105, 0120, 0945,1092, and 1301(sectoral scope 15).
[772] CDM project reference 0879, http://cdm.unfccc.int/filestorage/F/U/X/FUXO3X69QE61ZIOJ2IMAKNHTM0DJHB/PDD.pdf?t=OEl8MTMwNjk1NjcxNi42OA==|TGVhCovJrPUqoymhTYpKbhrQYhU=, 5. (UNFCCC Website, 11/1/2011).
[773] CDM project reference 0079, http://cdm.unfccc.int/filestorage/F/S/_/FS_292989657/Kuyasa%20PDD%20Final-2005.pdf?t=Mmh8MTMwNjk1NTExNC4zOQ==|mtZdQRjmo6gEFzfQXY5Ih14TymA=. (UNFCCC Website, 11/1/ 2011).

impact on local communities.[774] For example, 'Cuyamapa Hydroelectric Project,' aims to provide community development benefits that will contribute to the sustainable socio-economic development of the region and the country. The PDD stated that a 'Community Development Plan' (CDP) has been created in consultation with the local people, to encourage self-managing community projects. Based on consultation with the community, project participants designed activities *inter alia* to improve the quality of life of women, introduced teaching aids to local schools, product marketing assistance and preventative health care.[775] Also, in 'Biomass thermal energy plant – Hartalega Sdn.Bhd, Malaysia,' project participants commit to allocate 2.5% of the carbon credits revenues, annually, to support programmes that improve the quality of life of the local communities and the environment.[776] In 'Brazil NovaGerar Landfill Gas to Energy Project,' the project participants pledge to donate 10% of the electricity generated onsite to the local community to provide lightning for local schools, hospitals and other public buildings.[777]

Sectoral scope 1 had the highest numbers of PDDs with claims of direct benefit/programmes designed to benefit the local host communities (9 of the 16).[778] The high number of PDDs in sectoral scope 1, with direct benefit claims, supports the findings of earlier research that rank the sustainable development benefits of different CDM projects. Renewable and non-renewable energy projects, such as biomass, hydro, wind, and biogas energy projects have

[774] CDM project reference: 0028, 0045, 0051, 0113, 0122, 0253, 0606, 0895 and 0194 (sectoral scope 1); 0079, 0173 and 0160, and 0677 (sectoral scope 3); 0024, 0473, 0876 and 1186 (sectoral scope 4); 0099, 0490, 0557 , 0752 and 1011 (sectoral scope 5); 0672 (sectoral scope 7); 0616 and 0553 (sectoral scope 10); 0001and 0115 (sectoral scope 11); 0008, 0032, 0140, 0503 and 0908 (sectoral scope 13); and 0547 (sectoral scope 14).
[775] CDM project reference 0045 (sectoral scope 1) http://cdm.unfccc.int/UserManagement/FileStorage/FS_276804390, 3. (UNFCCC Website, 20/8/ 2009).
[776] CDM project reference 1186 (sectoral scope 4), http://cdm.unfccc.int/UserManagement/FileStorage/KK2PNH73HCUIC0XIG9H6DMVWNQH36G, 3 (UNFCCC Website, 15/8/ 2010).
[777] CDM project reference 0008 (sectoral scope 13), http://cdm.unfccc.int/UserManagement/FileStorage/FS_609234123, 4. (UNFCCC Website, 15/8/ 2010).
[778] The 9 CDM project are CDM project reference 0028, 0045, 0051, 0113, 0112, 0253, 0606, 0895, and 0194.

been assessed to have higher sustainable development benefits in the CDM.[779] However, the claims of direct benefit were generally low in all the sectoral scopes analysed. None of the PDDs analysed in sectoral scope 8[780] and only 2[781] of the 12 PDDs in sectoral scope 11 claimed direct benefits to the local community. All the projects analysed in sectoral scope 8 (mining/mineral production) are implemented in China and as a result of China's discriminatory taxation scheme for different types of CDM projects, CDM projects in this scope will be taxed a higher rate because projects in sectoral scope 8 do not fall within China's defined priority areas for sustainable development.[782] Therefore, it is unlikely that project participants are willing to go the extra mile to voluntarily commit additional funds for sustainable development programmes in local communities in China, after paying tax on the CERs earned from those projects. Similarly in sectoral scope 11, seven of the 12 projects are implemented in China and only 2 make claims of direct benefit to the local host communities.

Although generally, sectoral scope 11 HFC projects are criticised for contributing little to sustainable development in the CDM,[783] 'GHG emission reduction by thermal oxidation of HFC 23 at refrigerant (HCFC-22) manufacturing facility of SRF Ltd,' shows that commendable direct benefits to the local community is possible even in sectoral scope 11.[784] The project participants expressed their strong commitment to corporate social responsibility by committing funds to provide integrated watershed development, improving existing

[779] K. Olsen and J. Fenhann, 'Sustainable development benefits of Clean Development Mechanism projects: a new methodology for sustainability assessments based on text analysis of the project design documents submitted for validation' (2008) 36 *Energy Policy* 2819 at pg. 2828.
[780] CDM project reference 0770, 0840, 0902, 0892, 1135, 1230, and 1250.
[781] CDM project reference 0001 and 0115.
[782] See the discussions in Section 6.3.2 below.
[783] See the discussions in Chapter 3, Section 3.3.2. Also Olsen and Fenhann, (2008), 2826. In their analysis of PDDs, the authors noted that "[a] ranking of project types has emerged… It supports the critique of HFC and $N2_O$ projects having the least SD benefits."
[784] CDM project reference 0115 (sectoral scope 11), http://cdm.unfccc.int/UserManagement/FileStorage/C71S3S0NXMHFZ9VBQSJ0NOXOE0DRHA, 41. (UNFCCC Website, 18/8/ 2010).

educational infrastructure, undertaking HIV/AIDS awareness amongst high risk groups, and improving the effectiveness of HIV/AIDS solution delivery in the community.[785] Similarly, in 'Project for GHG emission reduction by thermal oxidation of HFC 23 in Gujarat, India' the project participants pledged to fund local programmes from the revenue generated through CERs earned from the project. According to the PDD, the funds will be used for selected community development activities such as, education, vocational training, hygiene and environment, water management and animal health.[786] Furthermore, the project participants anticipate that the community development activities will contribute significantly to the well-being of the local population, and alleviate poverty.[787] Although it is not clear from the assessment, this author speculates that the decision to establish social programmes are probably made as part of the project participants' corporate social responsibility programmes. Furthermore, it is unlikely that the CDM host government has any influence on the project participants' decision to include sustainable development programmes in the implementation of the project.

5.3.2. Stakeholder Participation[788]

As discussed in Chapter 3, the stakeholder participation process is one of the V & R requirements and one of the tools for achieving sustainable development. If undertaken effectively, it should contribute to the CDM's sustainable development objective. As highlighted in Chapter 3, an effective participation process should include some basic elements, which are: identification of relevant participants; access to information by the public; provision of information in a culturally-appropriate manner;[789] the opportunity for the

[785] Ibid.
[786] CDM project reference 0001 (sectoral scope 11), http://cdm.unfccc.int/UserManagement/FileStorage/FS_59491890, 83. (UNFCCC Website, 18/8/ 2010).
[787] Ibid.
[788] Sections E, E.1, E.2 and E.3 of the PDD contain statements relating to stakeholder participation.
[789] E. Petkova *et al.*, *Closing the Gap: Information, Participation and Justice in Decision-Making for the Environment* (Washington DC: World Resources Institute, 2002), 17. According to the authors, "[g]lobally

public to provide informed, timely and meaningful input; and access to a review process to seek redress and remedy for any harm suffered.[790] The stakeholder participation process for the CDM involves the following; identifying relevant stakeholders, inviting stakeholder to the consultation event, undertaking the stakeholder consultation event, which involves describing the project to the stakeholders and getting their comments on the project, and addressing the comments received from stakeholders.[791] The analysis of the assessment of the fulfilment of stakeholder participation is presented below.

(a) The Requirement for Stakeholder Participation was not fulfilled by all Projects

Stakeholder participation, unlike the EIA requirement, is a compulsory validation and registration requirement for CDM projects. However, with the exception of the basic stages set out above, the process and the procedure for fulfilling this requirement are largely left to the host countries and project participants to decide. The analysis of whether all projects fulfil the requirement for stakeholder participation in this study shows that not all the projects actually conducted a stakeholder participation process. For example, some of the reasons given in the PDDs for non-compliance with this requirement include, *inter alia*, that the proposed project has no negative environmental impacts, the project will not affect anybody negatively, and that local stakeholders did not express their concerns about the project during the invitation stage.[792] For example, stakeholder consultation was not undertaken for the 'El Canada Hydroelectric Project'. According to its PDD "IFC carried out and prepared the Project Environmental and Social Review, which was published on the IFC web site and in

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accepted norms must be translated into national-level policy frameworks in countries with different cultures…"

[790] See Chapter 3, Section 3.2.2. Also see: Petkova *et al.*, *Closing the Gap: Information, Participation and Justice in Decision-Making for the Environment* , 15; N. Eddy, 'Public Participation in CDM and JI Projects' in D. Freestone and C. Streck (eds.), *Legal Aspects of Implementing the Kyoto Protocol Mechanism: Making Kyoto Work* (Oxford: Oxford University Press, 2005).

[791] Decision 3/CMP. Annex, Paragraph 37(b).

[792] CDM project reference: 0606 (sectoral scope 1, India) 0123, 0255 (sectoral scope 3, India); 0247 (sectoral scope 4, Malaysia) and 0382 (sectoral scope 10, India).

the local press. This review was also available for public discussion in the El Palmar and Zunil municipalities. If required, the IFC documentation regarding the process is available for DOE review at the ENEL offices in Guatemala City. No concerns about the project were voiced by the local stakeholders during the process described above."[793] Its reliance on the Project Environmental and Social Review, which was published on its website and in the local press, only constitutes an invitation to stakeholders. The actual stakeholder consultation process therefore did not take place. Considering the fact that this is a hydroelectric CDM project with its associated impact on, *inter alia*, the local ecosystem and the possibility of loss of land, the rights of stakeholders could easily have been marginalised because they were not given the opportunity to be heard.

Also, in 'Demand-side energy efficiency programme in the 'Humidification Towers' of Jaya Shree Textiles' stated in its PDD that "[s]ince the project activity implementation involves a set of installations in the Humidification Towers (not requiring major transportation or other energy inputs), and is relatively small scale it has no significant negative environmental impacts to noise, air or water pollution outside the facilities, therefore comments from the local population is [sic] not necessary."[794] Again this is inadequate because the analysis indicates that equipment suppliers are usually foreign based companies that do not have ties to the local community and that will not be impacted either way by the implementation of the project.

[793] CDM project reference 0606 (sectoral scope 1), http://cdm.unfccc.int/filestorage/V/A/3/VA3W74Z62DLJJ9L15KU81S6C5NOLK6/PDD_El%20Canada_2006-09-17_v03.pdf?t=UU18MTMwNzEyMjY1OS42OQ==|ABgdWMsl_u15kvZuN93iYLtxSsM=. (UNFCCC Website, 9/5/ 2011).

[794] CDM project reference 0255 (sectoral scope 3, India). http://cdm.unfccc.int/filestorage/1/L/R/1LR6N96Q8GDEY53EYRT0CU06NI6MBK/JST-EE-DS-PDD-160106.pdf?t=V0N8MTMwNjI2OTIzNy41NQ==|FsdNgNT-WxkH3q-RTBv-ZRy5voo=, 44. (UNFCCC Website, 12/5/ 2011).

The above projects clearly do not fulfil the requirement for stakeholder participation and technically, they should not have been validated by the DOE and registered as CDM projects. It is not enough to say that the project has no discernible negative environmental impacts. The stakeholder process is meant to protect the public interest that may be negatively impacted by proposed projects. The process is one of the few avenues for stakeholders to raise their concerns about proposed projects and to ensure that mitigating measures or alternatives are sought. This is also a missed opportunity to specifically solicit concerns that local stakeholders might have not just with regards to the project but with the operations of the company and how it affects local stakeholders.

(b) The Process of Identifying Stakeholders is Unclear

As discussed in Chapter 3, the CDM rules do not set out the process by which project participants should identify stakeholders. Apart from Brazil, the CDM approval procedure of most of the host countries in this study does not specify how project participants should identify relevant stakeholders. As a result of this, there are no standard processes for identifying stakeholders, even within the same host country and, unfortunately, project participants adopt the process that best suits them and their projects. The disadvantage of this is that the CDM rules do not safeguard the rights of stakeholders that may be affected by the implementation of proposed projects, particularly if they are perceived to be against the project.

Furthermore, project participants, employees or the equipment supplier double as the stakeholder and the local community is side-lined from the consultation process.[795] For example, in 'Off gases utilisation from C – 03 washing tower in Primary Reformer as fuel'

[795] CDM project reference: 0123, 0255 (sectoral scope 3, India); 0382 (sectoral scope 10, India).

the PDD states that "[t]he project activity has no discernible negative environmental impacts as it is a small activity of energy optimization and equipment installed are also relatively small (not requiring major transportation or other energy inputs) and because there are no other contributions to noise, air or water pollution outside the facilities, no outsider local stakeholders were identified in particular. In this view, employees of TCL, working in the plant where project activity has been implemented have been identified as local stakeholders."[796] Ideally, the stakeholder consultation process should create an opportunity for local companies and local community to interact and this did not happen in the project above. Proper consultation is also needed to prevent issues from escalating into disputes that may affect both parties negatively. For example, regular interaction between oil companies and local communities in Niger-Delta, Nigeria helps to control situations that, hitherto, lead to destruction of oil pipelines and kidnapping of oil company staff by the local communities. Furthermore, the project's equipment supplier should not double as the stakeholder because his interest will be compromised, being the equipment supplier. In addition, it is unlikely that the equipment supplier would be an individual or organisation that is likely to be affected by the proposed CDM project because the analysis indicates that the equipment suppliers for CDM projects are usually foreign companies. Also, the identification of employees of project participants as stakeholders is inadequate. This is because employees are not independent parties and they are unlikely to voice concerns or negative comments for fear of reprisal or loss of job. In contrast, the approval procedure in Brazil specifies the minimum list of stakeholders that project participants should engage with during the stakeholder participation process. As a result of this guidance, the Brazilian DNA has effectively removed the possibility that relevant stakeholders might be overlooked or marginalised by project

[796] CDM project reference 0382 (sectoral scope 10), http://cdm.unfccc.int/filestorage/D149WS1C8WZ1IHBY428FAF9JH69SZV/PDD%20TCL%20Off%20Gas%20R3-20Mar06.pdf?t=SGF8MTI5NzA3Nzk0MC45NQ==|4HQp5cy7pFOsW3rAMGnJQQkZMuc= (UNFCCC Website, 6/2/ 2011).

participants during the consultation process. This process also ensures that as a minimum, the requirement for stakeholder participation is fulfilled by all CDM projects in Brazil.

(c) The Process of Inviting Stakeholders Varies

The second stage in the stakeholder participation process is inviting the identified stakeholders to the consultation event for the proposed CDM project. Again, Chapter 3 identified that this should be done in a culturally-appropriate manner, using media to which the identified stakeholders can reasonably be expected to have access. So, for example, in a community that mainly relies on newspapers or radios and such like, this kind of media should be used, rather than the internet, to which the majority of the members of such a community may not have access. However, 32 of the PDDs did not indicate the methods used to invite stakeholders.[797] For those that reported on how stakeholders were invited,[798] the most widespread method used was the local media such as newspaper advertisements, television and radio announcements. 29 projects used this method to invite stakeholders as follows.[799] 13 projects used public notice such as a notice advertised on the village billboard to notify stakeholders of the consultation process.[800] 15 projects used letters and other similar means to invite stakeholders.[801] 3 projects used an advertisement on the company website

[797] CDM project reference: 0028, 0045, 0051, and 0253(sectoral scope 1); 0123, 0160, 0159, 0173, 0255, 0261, and 1372 (sectoral scope 3); 0247 and 0847 (sectoral scope 4); 0837 (sectoral scope 5); 0672 (sectoral scope 7); 0840, 0902, 1230, and 1250 (sectoral scope 8); 0152, 0382, 0616, 0605, and 0553 (sectoral scope 10); 0011, 0151, 0306, and 0499 (sectoral scope 11); 0503 and 0908 (sectoral scope 13); and 0945 and 1301 (sectoral scope 15).

[798] Note that some of the projects used more than one method to invite stakeholders to the consultation/event, for example, advertisement in the newspaper and announcement on the radio.

[799] CDM Project reference: 0078, 0113, 0346, 0492, 0717, 0895, and 1332 (sectoral scope 1); 0079 (sectoral scope 3); 0473 (sectoral scope 4); 0116, 0557, 0765, 0752, 0922, 0099, 1083, and 1113 (sectoral scope 5); 0153, 0879, and 1080 (sectoral scope 10); 0232 (sectoral scope 11); 0048, 0097, 0140, 0197, and 0379 (sectoral scope 13); and 0105and 0120 (sectoral scope 15).

[800] CDM Project reference: 1127 (Sectoral scope 1), 0686, 0677, and 0832 (sectoral scope 3); 1135 0770 (Sectoral scope 8), 0496 (sectoral scope 10); 0115, 0193, 0550, 0001, 0767 (Sectoral scope 11); 0379 (sectoral scope 13).

[801] CDM Project reference: 0866 and 1188 (sectoral scope 3); 0183, 1070, 0361, 1186 (sectoral scope 4); 0490, 0698, and 1011 (sectoral scope 5); 0892 (sectoral scope 8); 1027 (sectoral scope 9); 0496 (sectoral scope 10); 0097(sectoral scope 13) and 0401 and 1092 (sectoral scope 15).

only,[802] and 8 projects used other random methods such as telephone,[803] email[804]and personal consultation.[805]

Given that the local circumstances that obtain in CDM host countries will be different, email may be the best option for inviting relevant stakeholders in a given community, while a notice posted on the village billboard may be the best option for relevant stakeholders in another community. However, it is important that stakeholders are invited and their comments solicited by using methods and procedures that suit local communities and their circumstances. For instance, in the project 'Methane capture and combustion from swine manure treatment for Corneche and Los Guindos,' the requirement for stakeholder participation was fulfilled by inviting comments from stakeholders solely through the company's website.[806] This is clearly an insufficient and inappropriate method to use as it would not ensure that the majority of stakeholders had access to relevant information about the proposed project and the effect of same on stakeholders. The only way relevant stakeholders would have found this information is if they happened, for whatever reason, to go to the company website. For those (probably the majority of the relevant stakeholders) that do not visit the website, they would not have had access to this information.

There are good examples of the fulfilment of the stakeholder participation requirement by project participants. CDM projects implemented in countries such as Brazil[807] and China,[808]

[802] CDM Project reference: 0606 (sectoral scope 1); 0032 (sectoral scope 13); and 0031 (sectoral scope 15).
[803] CDM Project reference 0961(sectoral scope 5).
[804] CDM Project reference 1113 (sectoral scope 5) and 0008 (Sectoral scope13).
[805] CDM project reference: 0122, and 0492 (sectoral scope 1); 0490 (sectoral scope 5); 1027 (sectoral scope 9); and 0008 and 0935 (sectoral scope 13).
[806]CDM Project reference 0031 (sectoral scope 15). http://cdm.unfccc.int/filestorage/VUTBKHM71OJEPY0AFW6DS3CG2X8N5Z/PDD%20Corneche%20Los%20Guindos%2028012010.pdf?t=dFR8MTI5NTg3MDgzOC4y|r4sLwkJVn3GYqD8575dkYajvmnI= . (UNFCCC Website, 19/1/2011).
[807] CDM Project reference 0116, 0698, 1011 (Sectoral scope 5), 0008 (sectoral scope 13), 0401, 1092 (sectoral

with standard procedures for the fulfilment of the V & R requirements, usually adopt appropriate means of inviting and engaging with stakeholders. A good example of stakeholder participation in China is 'Huaibei Haizi and Luling Coal Mine Methane Utilization Project.'[809] The project participants invited residents in Qujiang village (the nearest village to the proposed project) by displaying letters on village billboards for 10 business days, inviting opinions from stakeholders. The method used to engage with stakeholders seems appropriate in this case. The project is located in a local community, where it is likely that access to the internet and other sophisticated means of communication is limited. Therefore, advertising the project on the village billboard will ensure that a high percentage of stakeholders that are likely to be affected by the project are given an opportunity to comment.

'Shanxi Yangcheng Coal Mine Methane Utilization Project' another Chinese project demonstrates how to involve and solicit comments from stakeholders using the appropriate means of communication and involving different groups of stakeholders. Public comments were invited to evaluate the proposed project through public opinion questionnaires.[810] According to the PDD, "300 questionnaires were sent out during the investigation with a reply number of 295 (rate 98.3%). The participants with different education backgrounds were involved and a number of women were interviewed, which suggests a good

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scope 15).

[808] CDM Project reference 0771, 1127 (sectoral scope 1), 0837, 1083 (sectoral scope 5), 0840, 0902, 0892, 1135, 1230, 1250, 0770 (sectoral scope 8), 1250 (sectoral scope 10), 0306, 0232, 0011, 0550, 0868, 0767 (sectoral scope 11), 1301 (sectoral scope 15).

[809] CDM project reference 0770, http://cdm.unfccc.int/UserManagement/FileStorage/DNZ660JECH55ZHXHP6AUW2ISP9WWY6 , 73. (UNFCCC Website, 16/1/2011).

[810] CDM project reference 1250, http://cdm.unfccc.int/filestorage/4WPVTMJNA01W7IYXQ1OQY0ZY78R7AY/Revised%20PDD.pdf?t=VDh8MTI5NzAzOTE0Mi40Mw==|NRBs-ZL9NRSKVUhEHwlRHOgVv-4= (UNFCCC Website, 7/2/ 2011).

representation of this survey."[811] CDM projects implemented in countries with a standard process in place on how to invite and solicit comments from stakeholders are more likely to adopt appropriate means of communicating with stakeholders and soliciting comments on proposed CDM projects. Another example of good practice is 'Yangquan Coal Mine Methane (CMM) Utilization for Power Generation Project, Shanxi Province, China.'[812] In addition to the consultation required during the EIA process, the project participants conducted a separate open public meeting with the residents living near the proposed project site. The heads of village committees were sent letters inviting them and all members of the village to the meetings. In addition to the letters sent to the village heads, notices were posted on village notice boards.[813] This is another example of effective engagement with stakeholders because reasonable and appropriate methods that are suitable to local circumstances were used so that stakeholders that may likely be affected, or that had questions, could attend the meeting.

(d) The Stakeholder Participation Process is not always Adequate

The third stage in the stakeholder participation process is the actual stakeholder consultation process. As highlighted in Chapter 3, there is no universally-accepted process for stakeholder participation. However, there are some elements that should be present in an effective stakeholder participation process. The elements include, *inter alia*, that the consultation should: be conducted in the appropriate language (of the local community/stakeholders being consulted); take place in a central location; stakeholders should be provided with a non-technical summary of the project; and the consultation process should be organised jointly by

[811] Ibid at 49 PDD.
[812] CDM reference number 0892, http://cdm.unfccc.int/filestorage/D/N/Z/DNZ660JECH55ZHXHP6AUW2ISP9WWY6/PDD2.pdf?t=dmh8MTMwNjM1NDk4OS4wNg==|YkLSpd7pIo4uxuv_w1ztCWs0zvM=. (Website UNFCCC Website, 7/2/ 2011).
[813] Ibid. at 73.

the project participants and an independent representative of the local community.[814]

During the stakeholder participation process, varying processes and procedures were adopted to conduct the required stakeholder participation for CDM projects. The process and procedures adopted by project participants include: meetings;[815] surveys;[816] public opinion questionnaires;[817] interviews;[818] introduction of project concept at conferences; seminars and workshops;[819] advertising in local newspapers and other media avenues to invite public comments;[820] formal and personal letters;[821] emails;[822] telephone calls to identified stakeholders;[823] and posting on the company website,[824] or a combination of one or more of the above methods.[825] However, the most widespread procedure adopted by project participants for stakeholder participation is the meeting.

Regarding the methods used for the actual consultation event, it is difficult to conclusively state whether or not these are sufficient, because the sufficiency depends on the local

[814] L. Waldegren, 'The Gold Standard validation & verification manual for CDM projects', 46. http://www.cdmgoldstandard.org/fileadmin/editors/files/6_GS_technical_docs/manuals_and_methodolgies/GS%20VVM%20CER.pdf (The Gold Standard Foundation Website, 1/3/ 2011).
[815] CDM Project reference: 0028, 0045, 0078, 0122,0253, 0194, 0346, 0492, 0895 (sectoral scope 1); 0160, 0159, 0686, 0079, 0677, 0866, 1188, 1372 (sectoral scope 3); 0183, 0247, 0473, and 1186 (sectoral scope 4); 0557, 0922, 0361, 0837 0099, 1083, and 1113(sectoral scope 5); 0902, 1135, 0892 (sectoral scope 8); 1027 (sectoral scope 9); 0152, 0153, 0605, 1080 and 0553 (sectoral scope 10); 0003, 0115, 0232, 0011, 0306, 0001, 0499 (sectoral scope 11), 0048,0140, 0197, 0503, 0008, 0935, 0908 (sectoral scope 13); 0105 and 0120 (sectoral scope 15).
[816] CDM Projects 0194 (Sectoral scope 1), 0024 (Sectoral scope 4), 0840 (Sectoral scope 8).
[817] CDM Projects 0771, 1127 (Sectoral scope 1), 0902, 0892, 1230, 1250 (Sectoral scope 8), 0306, 0550, 0868 0767 (Sectoral scope 11), 1301 (Sectoral scope 15).
[818] CDM Project reference 0160, 0159, 0261, 0340, (Sectoral scope 3).
[819] CDM Project reference 0051 (Sectoral scope 1) 0173 (Sectoral scope 3), 0765 (Sectoral scope 5), 0032 (Sectoral scope 13), 0876
[820] CDM Project reference 0895, 1127, 0113, 0492, (Sectoral scope 1), 0078 (Sectoral scope 1), 0717 (Sectoral scope 4), 0003, 0232, (Sectoral scope 11), 0097 (Sectoral scope 11).
[821] CDM Project reference 0492, 1332 (Sectoral scope 1), 0866 (Sectoral scope 3) 0183, 0473, 0847, 1070, 1186(Sectoral scope 4), 1113 (Sectoral scope 5), 0097 (Sectoral scope 11).
[822] CDM Project reference 1113 (Sectoral scope 5).
[823] CDM Project reference 1113, 0961 (Sectoral scope 5).
[824] CDM Project reference 0031 (Sectoral scope 15).
[825] CDM Project reference 078, 0346, 0492, 0717, 1127, 0113 (Sectoral scope 1), 1113 (Sectoral scope 5), 0003 (Sectoral scope 11).

circumstances and what can be deemed ‘culturally-appropriate’ in any given circumstance. Obviously, ‘culturally-appropriate’ is location-specific and no general rules or conclusions can be reached in what should be generally regarded as culturally-appropriate. However, in order to be meaningful the process, as a minimum, should exhibit the elements of a meaningful consultation process highlighted earlier.

For some of the projects, it does appear that the methods used for the actual consultation event may not have been culturally-appropriate, for example, conducting stakeholder consultation solely through the company website or by email. In such instances, relevant stakeholders may have limited access to media, may not have access to the internet or even the ability to read. For instance, ‘El Canadá Hydroelectric Project’ is an example of a project that used a culturally-inappropriate method to engage with stakeholders.[826] The PDD stated that project participants “… prepared the Project Environmental and Social Review, which was published on the IFC website and in the local press. This review was also available for public discussion in the El Palmar and Zunil municipalities… No concerns about the Project were voiced by the local stakeholders during the process described above.” This is clearly insufficient because considering the type of project it is, the project participants ought to have made a better effort to engage effectively with relevant stakeholders. By way of contrast, ‘Brt Bogotá, Colombia: Transmilenio Phase II to IV’, a sustainable mass urban transport system project identified main stakeholders as the general public, persons living near construction sites of trunk routes and owners as well as drivers of existing baseline buses. This project conducted an exhaustive stakeholder participation process and this is reflected in the comments received. According to the PDD, the project participants participated in 36 fairs in

[826] CDM project reference 0606 (sectoral scope 1). http://cdm.unfccc.int/filestorage/VA3W74Z62DLJJ9L15KU81S6C5NOLK6/PDD_El%20Canada_2006-09-17_v03.pdf?t=bTV8MTI5ODgzOTQ0MC42NA==|IAdyv-lb8k46MNsy6mOSdA8FDGM=, 30. (UNFCCC Website, 16/1/2011).

all communities of the District of Bogotá to inform stakeholders and get their comments on the project, a focal point was established where residents living close to the construction site could voice their concerns, workshops were organised as well as meetings. The project received more than 25,000 questions, complaints, requests for information, and suggestions from stakeholders on how to improve the proposed project, as a result of the wide coverage and publicity drive to sensitise stakeholders of the proposed project.[827]

Although most of the projects conducted stakeholder participation process, the requirement is fulfilled according to environmental regulations and practices that exist or do not exist within CDM host countries. As a result the requirement is fulfilled using methods or procedures that are suitable for the project participants but not necessarily for the stakeholders. This has resulted in practices that are at extreme points of the scale, from the most inclusive practices to tokenism. Furthermore, the absence of minimum standards for fulfilling the stakeholder participation requirement is likely to be of benefit to project participants. This is because they can choose participation process that suits their interests and those of their project only, without effectively engaging with stakeholders. The analysis shows that the stakeholder participation process adopted by project participants varies within the same country, and from country to country. For example, CDM projects implemented in the same host country and registered under the same sectoral scope used different methods of stakeholder participation. In sectoral scope 5, 'Omnia Fertilizer Limited Nitrous Oxide (N_2O) Reduction Project' and 'Sasol Nitrous Oxide Abatement Project' are both large Annex I sponsored projects implemented in South Africa. While the former conducted stakeholder participation through a public information forum, the latter conducted stakeholder participation through the

[827] CDM project reference 0672, http://cdm.unfccc.int/filestorage/E/6/L/E6LUMUUAQA83IUZAPO9XWBMS6BTSAB/PDD%20version%206-09-06.pdf?t=VUJ8MTMwOTE0ODYzMC4wMQ==|ylAs43Cd5gD0tW6uI6sMK1FgTp4=, 65. (UNFCCC Website, 15/6/2011).

telephone, fax and email.[828]

Generally, there is little evidence that project participants tailor the stakeholder participation process to accommodate the diversity of stakeholders and their different levels of knowledge. Furthermore, because CDM projects usually involve technical details that may be difficult for all stakeholders to understand, it is important that stakeholders have access to project details and that the details are presented in a manner they will understand, so that stakeholders are able to participate effectively in the consultation process. Only a few of the projects acknowledge the different levels of technical, general knowledge and skill of relevant stakeholders.[829] For example, 'N2O Emission Reduction in nitric acid plant Paulínia, SP, Brazil' states that "[d]ue to the diversity of the stakeholders and different levels of knowledge of each stakeholder, Rhodia's strategy was to develop a basic model of the invitation and a brief presentation about climate change, Clean Development Mechanism and the N2O Abatement project of Paulínia. Consequently, with this material, Rhodia technicians visited stakeholders and were able to adjust the approach and language for each stakeholder based on their knowledge. This strategy aims to guarantee that all of the stakeholders have enough information to provide comments."[830]

Only one of the projects assessed indicated that it communicated with stakeholders in the local language of stakeholders. 'Methane recovery from waste water generated from wheat straw wash at Paper manufacturing unit of Shreyans Industries Limited (SIL)' in its PDD

[828] CDM project reference 0752 and 0961, http://cdm.unfccc.int/UserManagement/FileStorage/S7ZPOJ8E89VHCU7F88WD1LCX1PQESH, 54 and http://cdm.unfccc.int/UserManagement/FileStorage/S7ZPOJ8E89VHCU7F88WD1LCX1PQESH, 54 of PDD respectively. (UNFCCC Website, 18/1/2011).
[829] CDM project reference: 0078 (sectoral scope 1) and 0116 (sectoral scope 5).
[830] CDM project reference 1011, http://cdm.unfccc.int/filestorage/8/A/5/8A5IO1X4L4L6W92OQGQZFOF8B0VOBW/Brazil%20PDD.pdf?t=bGJ8MTMwNzE0NDM4Ni42OQ==|85gRSp2D7aIX2aAYdNCw7GOjX0U=, 60. (UNFCCC Website, 9/1/2011).

states that "[l]ocal language was used to communicate with stakeholders and project activity was briefed by SIL officials such that they can understand the activity and its associated impacts simply."[831]

Only two of the projects assessed consulted with stakeholders during the design stages of the proposed CDM projects. 'Kuyasa low-cost urban housing energy upgrade project, Khayelitsha (Cape Town; South Africa)' consulted with local community during the design stage of the project.[832] For example the PDD states that "[p]ublic participation in the Kuyasa low-cost retrofit CDM project activity has formed an integral part of the project design. This process was enabled through the specific structure of the project design team (PDT) as well as public meetings. Information on the project was also disseminated by means of varied local and international media, and was presented at various local and international conferences."[833] Also, 'Rio Blanco Small Hydroelectric Project' was initiated by the community and they were actively involved in its design and implementation. The PDD states that the stakeholders were involved in the development of the project and that several meetings between the members of the community, municipal authorities and other key organisations were arranged. [834] Furthermore, the PDD states that based on the comments received from the local community, the project participants and the local stakeholders were able to reach compromises on the project, such as the coordination of watershed reforestation

[831] CDM project reference 0935, http://cdm.unfccc.int/filestorage/S/3/N/S3NGEYC2I4TA1YMFG04G8K33AHO0FM/PDD.pdf?t=R1F8MTMwNjMyNTA2MC43Mw==|xr7ZRVnwXkjM33hWaeCiBZ7N-Kg=, 25. (UNFCCC Website, 9/1/2011).
[832] CDM Project reference 0079 (sectoral scope 3), http://cdm.unfccc.int/UserManagement/FileStorage/FS_305260458. (UNFCCC Website, 20/1/2011).
[833] http://cdm.unfccc.int/filestorage/F/S/_/FS_292989657/Kuyasa%20PDD%20Final-2005.pdf?t=a2J8MTMwNjQ0ODEzNS43|lj_-dGdt_gQTMpRl4EtMJjepFNI=, Section G. (UNFCCC Website, 20/1/2011).
[834] CDM Project reference 0028, http://cdm.unfccc.int/filestorage/F/S/_/FS_792172973/PDD%20Rio%20Blanco%202004-11-04.pdf?t=elZ8MTMwNjQ0NTA5NC41OA==|3fhxPq_GzsygxbjDMyFbkjScxIw=, 21. (UNFCCC Website, 20/1/2011).

activities with local students and the active participation of municipal authorities in the project.[835]

Both projects highlight the importance and advantages of involving the local community at the design stage of a project. Consulting with relevant stakeholders during the design stages of proposed projects is important for certain types of CDM projects, for example, CDM projects such as hydroelectricity projects, biomass projects, transport projects and other projects that will deliver services to the local community. It is essential that the comments of stakeholders should be sought during the design stage of some CDM project types, especially projects that will be implemented in local communities. This is because early consultation may increase the likely success and implementation of certain proposed projects.[836] For example, 'Eecopalsa – biogas recovery and electricity generation from Palm Oil Mill Effluent ponds, Honduras'[837] a GS project, conducted two rounds of stakeholder consultation, the initial public consultation required by the GS and the feedback session. The initial public consultation meeting took place at PALCASA's facility where the biogas project was officially presented and a site visit was also arranged for stakeholders. Although members of the local community were not in attendance at the initial meeting, the project participants went a step further by paying a second visit to the Environmental Department of the municipality of El Progreso.[838]

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[835] Ibid.

[836] E. Lokey, *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, (London: Earthscan, 2009), 236-237. According to Lokey, if the local community where a project will be implemented feels left out of the decision-making process, it is more likely to vandalise or sabotage the project.

[837] CDM project reference 0492, http://cdm.unfccc.int/filestorage/0/G/3/0G35KM5TNN62XI53X4VG3UYS6NI1VF.1/PDD%20Bundle.pdf?t=U098bTdrOGx4fDAMYRrSng6g2CDRzIpDSQaF.

[838] *Ibid.* at 30. Although stakeholders were invited to the meeting through personal invitation and newspaper advert.

Unfortunately, the CDM rules do not have a grievance mechanism for stakeholders and none of the PDDs indicate that such a mechanism has been established by CDM host countries. The grievance mechanism is important because it gives stakeholders an avenue to raise complaints during the implementation of the project, after the project scales through the CDM validation and registration process.

With regards to the implementation of this requirement by host countries, the analysis also shows that for the following host countries, the fulfilment of the requirement for stakeholder participation is ad-hoc and varies from detailed process to the barest minimum. This seems to be the case in South Africa,[839] Chile,[840] the Republic of Korea[841] and India.[842] For instance in India, some projects claimed to have interviewed identified local stakeholders during a recent exhaustive Corporate Social Responsibility (CSR) study, and did so in three stages - local, regional and national - to invite comments on the proposed project.[843] In contrast, other projects in India had minimal stakeholder consultation processes. For instance, 'Energy efficiency through installation of modified CO2 removal system in Ammonia Plant' stated in its PDD that "… because this project has no discernible negative environmental impacts, because the equipment installed is itself relatively small (not requiring major transportation or other energy inputs), and because there are no other contributions to noise, air or water pollution outside the facilities, no stakeholders other than the technology supplier was identified."[844] This indicates that some host countries make little effort to ensure that V & R

[839] CDM Project reference 0752 (sectoral scope 5), http://cdm.unfccc.int/Projects/DB/DNV-CUK1162558371.82/view , 54. (UNFCCC Website, 20/1/2011).
[840] CDM Project reference 0346 (sectoral scope 1), 0024 (sectoral scope 4), 0032, 0097, 0379 (sectoral scope 13) and 0031 (sectoral scope 15).
[841] CDM Project reference 0765, 0922, and 0099 (sectoral scope 5).
[842] CDM Project reference 0113, 0253, 0717, and 0895 (sectoral scope 1), 0123, 0255, 0261, 0340, 0686, 0677, 0832, 0866, and 1188 (sectoral scope 3), 0183, 0361, 0473, 0847, and 1070 (sectoral scope 4), 0003, 0193, and 0499 (scope 11), and 0945 (sectoral scope 15).
[843] CDM Project reference 0261, 0340 (sectoral scope 3) and 0113, 0253 (sectoral scope 1).
[844]CDM Project reference 0123,

requirements, such as stakeholder participation, that promote sustainable development are fulfilled effectively and consistently for all CDM projects. Instead, project participants are left to choose a process that best suits them and their projects. To sum up, implementation of the stakeholder participation requirement varies enormously. In some States, such as Brazil and China, there is detailed provision for stakeholder participation, which is generally applied in a consistent manner to all CDM projects. In other States, there is no such provision, and what is done in the name of stakeholder participation for CDM projects varies widely, sometimes even within the same State.

5.3.3. Environmental Analysis and Environmental Impact Assessment (EIA)[845]

The environmental analysis and EIA process are important processes for sustainable development because they aid the decision-making process of, for example, the regulator.[846] As highlighted in Chapter 3, the CDM rules require an analysis of the environmental impact of projects, including transboundary impacts. If the result of the environmental analysis is considered significant by the project participants or the host Party, the CDM rules provide that an EIA should be undertaken.[847]

98 of the projects undertook an environmental analysis, whereas it is unclear if two of the projects conducted an environmental analysis.[848] For instance, 'Russfin Biomass CHP Plant Project' did not state if it conducted an environmental analysis of the proposed project. The PDD states that "[t]he Forestal Russfin Plant does not need to enter the environmental impact evaluation system. This is due to the article 3.c, which states that power plants with capacity

http://cdm.unfccc.int/filestorage/C7XO4E94AHV6XLF0HS0NYDV5RURXT6/IGFL%20Final%20PDD-Post-Validation-20%20Oct%202005.pdf?t=Vm98MTI5NTgzODk4Mi43NA==|eaHqO6lHSssgD_Su9repWSUSoI8=. (UNFCCC Website, 20/1/2011). Also see CDM project reference 0255 (sectoral scope 3).

[845] See Chapter 3 for a more detailed discussion on the requirement for environmental analysis and EIA.

[846] Glasson *et al.*, *Introduction to Environmental Impact Assessment*, 7.

[847] Decision 3/CMP.1. Annex, Paragraphs 37(c).

[848] CDM project reference 0379 (sectoral scope 13). See also CDM project reference 0557 (sectoral scope 5),

lower than 3 MW do not cause a significant environmental impact to be evaluated by the designed environmental authorities."[849] From the statement in the PDD, it is difficult to determine if the project conducted an environmental analysis or not, particularly because the PDD uses a different language (environmental impact evaluation system). Furthermore, it is not clear if not conducting an 'environmental impact evaluation system' refers to the requirement for environmental analysis or EIA. Also, 'Catalytic N2O Abatement Project in the Tail Gas of the Nitric Acid Plant of the Pakarab Fertilizer Ltd (PVT) in Multan, Pakistan' did not mention if it conducted the required environmental analysis, although the PDD states that EIA is not required for the proposed CDM project.[850]

As discussed in Chapter 3, the CDM rules do not provide guidelines on how the requirement for environmental analysis should be fulfilled by project participants. As such, 19 of the PDDs did not report the outcome of the environmental analysis. For example, 'Rithwik 6 MW Renewable Sources Biomass Power Project' merely states in its PDD that "[t]he environmental impacts are not considered significant", and the environmental analysis that was used to reach that conclusion was not attached as an annex to the PDD.[851] On the other hand, 'Rio Blanco Small Hydroelectric Project' provides a detailed report of the environmental analysis conducted and the result of the analysis in its PDD and also attached

[849] CDM project reference 0379 (sectoral scope 13), http://cdm.unfccc.int/filestorage/H/5/A/H5A93H9B0KKEFP8O01YLEN97F1HOV8/SSCPDDIgnisterra-ver0011.pdf?t=bG58MTMwNjU5MTc3NC43Ng==|pRMcNaosKPk3pKddb5FdaSuigBc=, 33. (UNFCCC Website, 16/5/2011).

[850] CDM project reference 0557, http://cdm.unfccc.int/filestorage/4/X/I/4XIS6CBV4XDU6HG3IGM8MIR01VL4SB.1/PDD_Pakistan_Pakarab_v1_0rev_final.pdf?t=Uk98MTMwNzIwMDM2MS43NQ==|syVcETUfYkrSCddjyeykUCnwDLQ=, 44. (UNFCCC Website, 16/5/2011).

[851] CDM Project reference 0253, http://cdm.unfccc.int/filestorage/1/E/K/1EKCG93LMBAWD4X8QU76TZSNFR05OI/CDM-PDD.pdf?t=c2d8MTMwNjQ0ODg1Ny4zNA==|zD2HShbiwtGtdFWlQPf0S7_xu-c=, 51. (UNFCCC Website, 16/5/2011). The following projects did not provide details of the outcome of the environmental analysis for proposed CDM projects in the PDDs, or as an annex attached to the PDD: 0557, 0765, 0698, 0922, and 1113 (sectoral scope 5); 0382, 0496, 0616, 0605, 0879, 1080, (sectoral scope 10); 0048, 0197, 0379, 0503, (sectoral scope 11); 0105, 0120, 0945 and 0031(sectoral scope 15).

the full report as an annex to the PDD.[852] Since environmental analysis is one of the V & R requirements, the author expected that all the PDDs will provide details of the outcome of the environmental analysis conducted through a summary in the PDD and an Annex to the PDD.

Furthermore, because the standard for fulfilling the requirement for environmental analysis is not clear, it is possible that projects with negative environmental impacts are allowed to pass through the validation and registration process. This is a major omission because a project cannot be said to be sustainable if it reduces emission but results in negative impacts on environmental, social and economic sector in the host country. For instance, although an EIA is not required in India, 'Methane Recovery from Waste Water Generated from Wheat Straw Wash at Paper Manufacturing Unit of Shreyans Industries Limited (SIL)'[853] conducted an environmental analysis of the proposed project, which indicated environmental impacts arising from the implementation of the project. As a result of this, a mitigation plan was duly put in place to monitor and mitigate those impacts. The PDD states that "[e]nvironmental impacts… have been identified due to the project activity and a mitigation plan to minimize the impacts has been drafted."[854]

58 of the projects assessed did not undertake EIAs,[855] either because those projects fall under

[852] CDM project reference 0028, http://cdm.unfccc.int/filestorage/F/S/_/FS_792172973/PDD%20Rio%20Blanco%202004-11-04.pdf?t=elZ8MTMwNjQ0NTA5NC41OA==|3fhxPq_GzsygxbjDMyFbkjScxIw=, 21 and Annex 7. (UNFCCC Website, 16/5/2011). The following projects provided details of the outcome of the environmental analysis of proposed CDM projects in the PDDs, or as an annex attached to the PDD: 0261, 0340, 0079, 0866, and 1188 (sectoral scope 3); 0183, 0247, 0361, 0473, 0847, 1070 and 1186 (sectoral scope 4); 0116, 0752, 0099, 1011 (sectoral scope 5); 1027 (sectoral scope 9); 0003 and 0151 (sectoral scope 11); 0935 and 0908 (sectoral scope 13).

[853] CDM project reference 0935 (sectoral scope 13).

[854] Ibid. http://cdm.unfccc.int/filestorage/S/3/N/S3NGEYC2I4TA1YMFG04G8K33AHO0FM/PDD.pdf?t=dm98MTMwNjU5MzAzOS4zMQ==|SMtsoA2XBNL27XFA8RUGCX1QmFw=, 23. (UNFCCC Website, 16/5/2011).

[855] CDM project reference: 0078 ,0113, 0122, 0253and 0717 (sectoral scope 1); 0123, 0160, 0159, 0173, 0255, 0261, 0340, 0686, 0079, 0677, 0832, 0866, 1188, and 1372 (sectoral scope 3); 0183, 0247, 0361, 0473, 0847,

categories of projects that do not require an EIA procedure in the host country, or the host country regulation does not require an EIA for any of its CDM projects, irrespective of the project's possible impact on environmental, social and economic impacts. As such, the decision on fulfilment of EIA in the CDM belongs to the host country solely, although project participants can undertake EIAs voluntarily. Therefore, for this section, the analysis will be based on EIA practices of the host countries in this study.

According to the PDDs, 13 of the 24[856] countries hosting CDM projects assessed for this thesis do not require EIAs for all or most of the proposed CDM projects, irrespective of the size or sectoral scope of the projects. The countries are Bangladesh,[857] Moldova,[858] Israel,[859] India,[860] Indonesia,[861] Philippines,[862] Bolivia,[863] Tanzania,[864] Pakistan,[865] Mexico,[866] South Africa,[867] Malaysia,[868] and Republic of Korea.[869] It should be noted that, apart from India, the above cited host countries do not have the highest percentage of projects assessed for this thesis, and they do not have projects implemented in all the sectoral scope assessed for this thesis. So statistically, this affects the conclusion drawn from the above analysis.

1070, 0876, 0024, and 1186 (sectoral scope 4); 0116, 0557, 0765, 0698, 0752, 0922, 0099, 0961, 1011, and 1113 (sectoral scope 5); 0672 (sectoral scope 7); 1027 (sectoral scope 9); 0153, 0382, 0496, 0616, 0605, 0879, and 1080 (sectoral scope 10); 0003, and 0151 (sectoral scope 11); 0097, 0197, 0379, 0503, 0935, and 0908; and 0105, 0120, and 0945 (sectoral scope 15).

[856] See Figure 5.1 for percentage of projects implemented by developing countries

[857] CDM project reference 0078 (sectoral scope 1).

[858] CDM project reference 0160, 0159, 0173 (sectoral scope 3).

[859] CDM project reference 1113 (sectoral scope 5).

[860] CDM project reference: 0113, 0253, 0717 (sectoral scope 1); 0123, 0255, 0261, 0340, 0686, 0677, 0832, 0866, 1188 (sectoral scope 3); 0183, 0361, 0473, 0847, 1070 (sectoral scope 4); 0382, 0496 (sectoral scope 10); and 0945 (sectoral scope 15).

[861] CDM project reference 0616 (sectoral scope 13).

[862] CDM project reference 0605 (sectoral scope 10).

[863] CDM project reference 0048 (sectoral scope 13).

[864] CDM project reference 0908 (sectoral scope 13).

[865]CDM project reference 0557 (sectoral scope 5).

[866] CDM project reference: 0180, 0879 and 0153 (sectoral scope 10); 0151 (sectoral scope 11); 0197 (sectoral scope 13); and 0120 and 0105(sectoral scope 15).

[867] CDM project reference: 0079 (sectoral scope 3); 0752 and 0961 (sectoral scope 5); and 1027 (sectoral scope 9).

[868] CDM project reference: 1372 (sectoral scope 3); 0247 and 1186 (sectoral scope 4); and 0503 (sectoral scope 13).

[869] CDM project reference: 0922, 0099, 0765 (sectoral scope 5); and 0003 (sectoral scope 11).

CDM projects implemented in China and India represent a majority of the projects assessed for this thesis. The analysis shows that China required EIAs for all the 20 proposed CDM projects assessed in this study, irrespective of sectoral scopes or project size.[870] However, majority of the projects in India did not conduct EIAs. Of the 25 projects assessed for this study in India, only 5 conducted EIAs and it seems that these projects have conducted EIAs voluntarily or to comply with their funding requirements.[871] 'Destruction of HFC-23 at refrigerant (HCFC-22) manufacturing facility of Chemplast Sanmar Ltd' states in its PDD that "Indian Environmental Regulations do not require an EIA to be conducted for the project activity. However project proponent has conducted an EIA through an independent agency."[872] Similarly, 'GHG emission reduction by thermal oxidation of HFC 23 at refrigerant (HCFC-22) manufacturing facility of SRF Ltd' voluntarily conducted an EIA. According to its PDD, although India's Environmental Protection Act 1986 does not require an EIA, the project participants have voluntarily conducted an EIA to be cognizant of the impacts and take mitigation measures as necessary".[873]

Overall, whether or not an EIA is undertaken depends on the host country's environmental regulations and national approval procedure for CDM projects. Regrettably, the need to conduct an EIA is not influenced by individual projects and their possible impact on the

[870] CDM project reference: 0771, 1127 (sectoral scope 1); 0837 and 1083 (sectoral scope 5); 0840, 0902, 1135; 1230, 1250, 0770 and 0892 (sectoral scope 8); 0193, 0232, 0011, 0306, 0550, 0868, and 0767 (sectoral scope 11); 0547 (sectoral scope 14) and 1301 (sectoral scope 15).
[871] CDM project reference: 0895 (sectoral scope 1); 0115, 0001, 0499 (sectoral scope 11); and 0935 (sectoral scope 10).
[872] CDM project reference 0499, http://cdm.unfccc.int/filestorage/1/2/I/12IY50M86DDL0KY9OXCGXL1KDU4RA3.2/CSL_PDD_ver%201.2F.pdf?t=UHB8MTMwNzIwMzk5MC45NA==|Tq70H9IJBSNi9KcnP3UJB58g1cI=, 27. (UNFCCC Website, 22/5/2011).
[873] CDM project reference 0115, http://cdm.unfccc.int/filestorage/C/7/1/C71S3S0NXMHFZ9VBQSJ0NOXOE0DRHA/SRF_PDD_Oct15%20ver5%20clean.pdf?t=N3Z8MTMwNzIwOTI3Ny41Mg==|0BZmgclz89nIRApANWa7HM5gBnA=, 27. (UNFCCC Website, 22/5/2011).

environment. Indeed, while some host countries require EIAs for all projects irrespective of the sectoral scope or size of the project, other host countries do not require EIAs for any project, irrespective of projects' likely impact on the environment, size or sectoral scope. It is hereby acknowledged that the circumstances of two proposed CDM projects will most likely be different, especially if they are proposed to be implemented in different host countries, in different sectoral scopes or in different environments within the same host country. As such, the need for an EIA should not only be a function of host country environmental regulations but the individual circumstances of proposed CDM projects should be a deciding factor as well.[874] For instance, none of the 14 projects in sectoral scope 3 conducted EIAs[875] and only 1[876] of the 9 projects in sectoral scope 4 conducted EIAs.[877] These are clearly influenced by the environmental regulations in the host countries, despite the fact that some of the projects may have negative environmental and social impacts.

5.3.4 Baseline and Monitoring Methodologies

As discussed in Chapter 3, the CDM rules only requires the monitoring, verification and reporting of GHGs reduction achieved as a result of the implementation of CDM projects. The CDM rules and the CDM host countries do not require that the sustainable development impact of CDM projects be monitored, reported and verified as part of the verification and certification process before CERs are awarded.[878] The analysis of this requirement will focus on whether, in addition to monitoring the emission reductions achieved, the sustainable development impacts will be monitored as well.

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[874] See discussion in Chapter 3, on the GS requirement for the 'Do No Harm' assessment which was compared to the V & R requirement for environmental analysis.
[875] Sectoral scope 3 projects are energy demand, and energy efficiency projects. CDM project reference: 0123, 0255, 0261, 0340, 0686, 0677, 0832, 0866, and 1188 (India); 0079 (South Africa); 1372 (Malaysia); and 0160, 0159, and 0173 (Moldova).
[876] This is a project implemented in Argentina, CDM project reference 0876.
[877] CDM project reference: 0183, 0361, 0473, 0847, 1070 (India); 0024 (Chile); and 1186 and 0247 (Malaysia). Sectoral scope 4 is manufacturing industry.
[878] See Chapter 3, Section 3.2.6 for detailed discussion on this requirement.

The PDDs analysed for this study contain several claims of sustainable development benefits that will accrue to the host country from the implementation of CDM projects.[879] However, 96 of the projects did not have a monitoring plan to monitor and verify the sustainable development impact of projects during implementation. Only 4 projects stated in their PDDs that the sustainable development impact of proposed CDM projects will be monitored.[880] 'Recovery of associated gas that would otherwise be flared at Kwale oil-gas processing plant, Nigeria' states that it will introduce a sustainability monitoring plan to measure the sustainable development benefits of the proposed project.[881] According to the PDD, the following sustainable development benefits will be monitored through the sustainability monitoring plan: increase of national energy and electricity supply in Nigeria without adding to existing levels of fossil fuel consumption; improvement in electricity transmission grids; provision of employment; transfer of technical knowledge to the local population; and contribution to rural poverty alleviation through the provision of reliable power supplies.[882] Also, in 'Santa Cruz Landfill Gas Combustion Project,' the sustainable development indicators of the project will be monitored through the sustainable development monitoring plan, which was attached to the PDD as an Annex.[883] Some of the indicators to be monitored in this project include job creation, technology transfer, and air quality.[884] Without monitoring, verifying and reporting the sustainable development contribution of CDM

[879] See Section 5.3.1 (b) above.
[880] CDM Projects: 0553 (Nigeria) and 0152 (Vietnam) (sectoral scope 10); 0001 (sectoral scope 11); and 0048 (Bolivia) (sectoral scope 13).
[881] CDM project reference 0553, http://cdm.unfccc.int/filestorage/T/2/N/T2N9G73GCSUW91EJUE7BJRW9NGIOLU/Final%20PDD-Nigeria%20_03_08_06.pdf?t=bkJ8MTMwNjg2OTQzMi4xOQ==|NvzGQ4TEy02RNq91YsntuWdHcG0=, 4. (UNFCCC Website, 4/5/ 2011).
[882] *Ibid.*
[883] CDM project reference 0048, http://cdm.unfccc.int/filestorage/F/S/_/FS_993733516/CDM_PDD_FINAL%20070205.pdf?t=bUZ8MTMwNjg3NDc1NS4wNA==|_zhWRGA3dESdM35a3jRyPgrP8Aw=, 46-47. (UNFCCC Website, 4/5/2011).
[884] *Ibid*.

projects, some of the claims made in the PDDs become mere claims by CDM project participants. It is not enough for project participants to make claims of sustainable development benefits without a monitoring, verification and reporting mechanism to ensure that such benefits actually occur. Furthermore, the introduction of such a requirement would allow CDM host countries make informed choices on proposed CDM projects.

5.3.5: ADDENDUM: Fulfilment and Implementation of Validation and Registration Requirements - Analysis of Registered CDM Projects

In general, there is an improvement in the fulfilment and implementation of the V & R requirements that are tools for promoting sustainable development. Some of the improvements are in the fulfilment and implementation of the host countries' confirmation of sustainable development contribution, host country approval procedure for proposed CDM projects and transfer of technology. The findings are presented below. Note that the analysis made here is based on the sustainable development claims contained in the PDDs only. These claims are impossible to verify because the CDM rules do not require monitoring of sustainable development contributions during the implementation of the project.

5.3.5 (i) Written Confirmation of Sustainable Development Contribution of CDM Project

Sustainable development claims made in the PDDs are more concrete and easy to monitor and verify. Some of the sustainable development claims made are power generation, access to clean energy and less dependence on coal and other fossil fuel,[885] improved road infrastructure,[886] and job creation.[887] Power generation and access to clean energy is the most common sustainable development claim made by project participants, in the PDDs assessed.

[885] See the following CDM project: CDM project reference 6091, 6059, 5280, 5957, 5854, 5280, 5838 5552, 4787, 5509; 5942 (Guatemala); 5615 (Viet Nam); and 4520, 5740, 5213, 5313 (India).
[886] CDM project reference: 5313, 5213 (India); 4520 (Vietnam); and 6059 (China).
[887] CDM project reference: 4787, 5509, 6091, 5280, 5957, 5838, 5844, and 5522 (China); 5313and 5740 (India); 5942 (Guatemala); 5615 (Vietnam).

This has changed from previous analysis where employment generation was the most common sustainable development claim made by project participants. However, employment generation is still a common claim to sustainable development in the CDM.

The analysis also indicates that some host countries have established additional requirements that can enhance the sustainable development objective of the CDM. For instance 'Partial Substitution of Coal by Jatropha Fruits and Biomass Residues in the Production of Portland Cement' in Senegal requires that CDM projects should conduct a Strategic Environmental Impact Assessment (SEA) in addition to the V & R requirement for EIA.[888] Also, 'Palo Viejo Hydroelectric Project' in Guatemala requires an Environmental Management and Social Plan (ESMP) from project participants in order to assess and monitor possible negative impacts.[889] The PDD states that "[t]o mitigate the impacts that the project could have on each issue, an Environmental Management and Social Plan (EMSP) was designed and included in the EIA. This EMSP suggests the preventive, control, mitigating, rehabilitation and monitoring of environmental measurements during construction and operation, derived from the impacts analysis…"

With regards to transfer of technology claims made in the PDD, the incidence of technology transfer has reduced from the analysis made in Section 5.3.1. As highlighted earlier in Section 5.3, certain technologies are more diffused in some developing countries such as China and India.[890] This may be due to the fact that sectoral scope 1 renewable energy projects make up the bulk of the projects assessed for this addendum, and generally, energy

[888] CDM Project reference 5626, available at http://cdm.unfccc.int/filestorage/2/L/I/2LI5DBXJ9TY6W4UMRP0OQEHA3C7KG8/5626-%20PDD.pdf?t=bFF8bThmaGFlfDAc7hG26ZqBjLpLm5waZLzi, 97.
[889] CDM project reference 5942, available at http://cdm.unfccc.int/Projects/DB/DNV-CUK1332751491.14/view.
[890] S. Seres and E. Haites, 'Analysis of technology transfer in CDM projects', 18.

efficiency and renewable energy EST technologies are highly diffused in developing countries.[891] For instance, 16 of the 20 projects assessed for this addendum are sectoral scope 1 projects implemented China,[892] India,[893] Vietnam[894] and Guatemala.[895] None of the projects in China and India claim transfer of technologies for these projects. This finding is in line with earlier findings in Section 5.3 *supra*, where, sectoral scope 1 projects in china and India were less likely to claim sustainable development. Therefore, the present findings indicate that through the diffusion of renewable energy technologies, the CDM is successful in providing access to cleaner energy, thus promoting sustainable development. Another key improvement with regards to technology transfer in the CDM is that the incidence of using in-house technology has increased in the CDM. As highlighted in Section 5.3.1 *supra,* locally developed technologies have an added advantage of being developed to suit local circumstances. For instance, Partial Substitution of Coal by Jatropha Fruits and Biomass Residues in the Production of Portland Cement' stated in its PDD that technology to substitute coal with biomass in the project consisted of in-house design of a new and additional biomass fuel feeding system.[896] The in-house design of ESTs is also encouraging the transfer of technology between countries in the same region and between developing countries. For instance, 'Suoi Trang Hydropower Plant' in Vietnam claims transfer of technology and equipment from China, although Switzerland is the Annex I country involved in the project and China is not a Party to the project.[897]

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[891] *Ibid*.
[892][892] CDM project reference 5509, 4787, 5552, 5844, 5838, 5854, 5957, 5280, 6059, 6051, and 5021.
[893] CDM project reference 5642, 5213, 5313, and 5740.
[894] CDM project reference 5616 and 4520.
[895] CDM project reference 5942.
[896] CDM project reference 5626 available at http://cdm.unfccc.int/filestorage/2/L/I/2LI5DBXJ9TY6W4UMRP0OQEHA3C7KG8/5626-%20PDD.pdf?t=MGh8bThmaDlxfDDs3qzLfcvZghkF8IaM0M38 , 10.
[897] CDM project reference 5615 available at http://cdm.unfccc.int/filestorage/A/B/2/AB20Y7ZF4H9L8IVMDESK3RPOQ6C1TU/Untitled%20%28uploaded%2023%20May%2012%2012%3A07%3A43%29.pdf?t=V3V8bThnbGVpfDDSiVpjLbLRaqtL-9D7KjMx, 7.

A key finding of this analysis is that the CDM has been successful in promoting sustainable development in countries that have a structured approval procedure and that have defined their development priority areas for sustainable development.[898] A key example is China. As highlighted previously in Section 5.3.1, China's defined priority areas for sustainable development includes energy efficiency and renewable energy projects. 10 of the 11 projects assessed for this addendum, and implemented in China, are sectoral scope 1 renewable energy projects.[899] This indicates that China's discriminatory taxation scheme on CERs has discouraged sectoral scope 11 HFC projects that do not align with its defined priority area for sustainable development and that does not promote sustainable development generally, and its favourable taxation scheme for energy and renewable energy projects has succeeded in attracting CDM investment that promotes its sustainable development. Furthermore, all the projects claim, *inter alia*, generation of cleaner energy, reduction of energy poverty, and improved access to energy, thus assisting China in fulfilling its sustainable development priority area.

5.3.5 (ii) Stakeholder Participation

The procedure for conducting stakeholder participation still varies from country to country and it also varies within the same country. The most common being meetings, followed by surveys and questionnaires. Furthermore, there were no indications in the PDDs that procedures that will enhance the stakeholders' participation process are being implemented by host countries, such as provision of non-technical summary of PDD to stakeholders, and translation of proceedings into local language and consulting with stakeholders during the design stage of the project. However, 2 of the projects adopted some of these procedures in

[898] These countries were analysed earlier in Section 5.3.1.
[899] CDM project reference: 5509, 4787, 5552, 5844, 5838, 5854, 5957, 5280, 6059, 6051, and 5021.

consulting with stakeholder.[900] For instance, 'Suoi Trang Hydropower Plant, Vietnam' indicated in their PDDs that stakeholders will be presented with a non-technical summary of the PDD and that the proceedings of the meeting will be translated into local languages.[901]

5.3.5 (iii) Environmental Analysis

The fulfilment of this requirement still varies, although there is a slight improvement in the manner of fulfilment. For instance, some of the PDDs provide a detailed non-technical summary of the analysis report in the PDD,[902] although none of the projects attached the report of the environmental analysis to the PDD. The fulfilment of the requirement for EIA remains the same because it is dependent on the host countries' environmental regulations.

5.3.5 (iv) Baseline and Monitoring Requirement

None of the host countries require monitoring of sustainable development impact during project implementation. However some of the projects indicate in the PDD that the negative impacts identified, as a result of the environmental analysis conducted, will be mitigated. These projects have gone a step further by establishing mitigating measures to address the negative impacts identified.[903]

Overall, there is an indication of an improvement in the fulfilment and the implementation of the V & R requirements. The overall effect of the improvement is that there is a correlation in the fulfilment and implementation of the V & R requirements that will promote sustainable development. For instance, projects with concrete sustainable development claims also tend to conduct detailed environmental analysis to identify likely negative impacts, and they also

[900] CDM project reference 5492 and 4520.
[901] CDM project reference 4520, available at http://cdm.unfccc.int/filestorage/A/B/2/AB20Y7ZF4H9L8IVMDESK3RPOQ6C1TU/Untitled%20%28uploaded%2023%20May%2012%2012%3A07%3A43%29.pdf?t=V3V8bThnbGVpfDDSiVpjLbLRaqtL-9D7KjMx, 25.
[902] CDM project reference 5844 and 5552.
[903] CDM project reference 4520, 5642 and 5626.

tend to establish mitigation measures to address the negative impacts identified and a project monitoring plan to monitor those impacts during project implementation.

The overall effect of the improvement is that projects with concrete sustainable development claims also tend to conduct detailed environmental analysis to identify likely negative impacts, and they also tend to establish mitigation measures to address the negative impacts identified and a project monitoring plan to monitor those impacts during project implementation. The overall effect of this is that there is an obvious correlation in the fulfilment and the implementation of those V & R requirements that can promote sustainable development in CDM host countries, such that the result of one influences the fulfilment of the other.

5.4 Supervision of the V & R requirements – Analysis of Rejected Projects

This section analyses all the 84 projects that had been rejected by the EB as at the time of project selection in December 2008. As noted above, the EB is responsible for the oversight of the CDM and for ensuring compliance with the V & R requirements. The focus of this section is therefore on ascertaining how effective the EB is in supervising compliance with the requirements. To do this, rejected projects are analysed for the reasons for their rejection. This will allow the thesis to conclude on the extent to which the EB supervises the fulfilment of the V & R requirements, especially those requirements that are regarded as tools for promoting sustainable development.

Of the 84 rejected projects, 48 are unilateral projects while 36 are Annex I sponsored

projects.[904] This figure shows that rejection of proposed CDM projects is not significantly affected by whether they are unilateral or Annex I sponsored projects. Further analysis indicates that of the 84 projects, 50 were rejected for failing the additionality test,[905] 17 for using an incorrect baseline,[906] 12 for failing the baseline and monitoring methodologies requirement,[907] 3 for having incorrect project start dates,[908] and 2 projects for inadequate documentation.[909] Further analysis shows that projects in the different sectoral scopes were rejected by the EB for reasons that are particular to specific sectoral scopes. For instance: renewable and non-renewable energy projects (sectoral scope 1) are more likely to be rejected for the additionality test; manufacturing industry projects (sectoral scope 4) are more likely to be rejected for adopting the wrong baseline methodology to calculate the project's baseline emissions; and energy demand projects (sectoral scope 3) mainly because the projects adopted the wrong monitoring methodology.

This therefore suggests that the EB is supervising the fulfilment of the V & R requirements. However, the question is whether the EB is supervising the V & R requirements in a way that would promote the sustainable development objective of the CDM. From the figures presented above, it is clear that all these projects were rejected for failing to fulfil V & R requirements that relate to the emission reduction objective of the CDM, such as additionality and baseline and monitoring methodologies. The analysis of the fulfilment of the V & R

[904] See Figure 5.6 above.
[905] Rejected project reference 0221, 0224, 0311, 0317, 0400, 0454, 0522, 0683,0715, 0977, 0990, 1014, 1016, 1042, 1065, 1077, 1109, 1132,1173, 1184, 1195,1201,1204, 1217, 1235, 1252, 1297, 1331, 1377, 1383, 1398, 1412, 1447, 1545 1611, 1494, 1669, 1702, 1707, 1710, 1718, 1725, (Sectoral scope 1), 0754, 0854, 0861, 0863, 1084, 1356, 1475 (Sectoral scope 4), and 1735 (Sectoral scope 13).
[906] See: 0761, 0871, 0997, 1004, 1022, 1035, 1043, 1044, 1056, 1148, 1215, 1479, 1625, (Sectoral scope 1); 0951, 0954 (Sectoral scope 4); 1285 (Sectoral scope 13); and 1846 (Sectoral scope 15).
[907] See: 0988, 1023, 1030, 1050, 1055, 1057, 1058, and 1060 (Sectoral scope 3); 0859, 0929, 1041 (Sectoral scope 4); and 0457 (Sectoral scope 13).
[908] See: 0443, 0964 (Sectoral scope 1); and 0972 (Sectoral scope 10).
[909] See 0474 and 0410 (Sectoral scope 1). 0474 was rejected because the PDD and the validation report uploaded by the DOE with the request for registration were different in substance from those approved by the DNA of the host party. 0410 was rejected because the LoA of the DNA of the host party was not valid.

requirements in Section 5.3 indicates that the requirements that relate to sustainable development are not being fulfilled effectively, by CDM project participants, in a way that will promote sustainable development. However, despite this, the EB has registered those projects. This is essentially because the requirements have been fulfilled as provided for in the CDM rules and also because the CDM rules do not give the EB the required authority to supervise the V & R requirements in a manner that will promote sustainable development. In other words, the EB cannot reject projects for reasons outside what is allowed by the CDM rules. For instance, as long as a project conducts stakeholder participation and shows how comments received were addressed, the EB cannot reject the project on the basis that the method used to conduct stakeholder participation was not culturally-appropriate. This is because the CDM rules lack minimum standards and guidelines for fulfilling the requirements that will contribute to sustainable development. This is a key failing of the CDM rules and this prevents the EB from supervising those V & R requirements that contribute to the CDM's sustainable development objective.

5.5: Summary of Findings: Has the practical application of the V & R requirements helped or hindered the promotion of sustainable development?

The analysis of written confirmation of sustainable development contribution of CDM Project[910] shows that CDM projects in host countries with robust procedures for the fulfilment of the V & R requirements contribute, in more and varied ways, to sustainable development in those countries. Therefore, as seen in China's unique tax scheme and in Brazil's procedure for stakeholders' participation, host countries can introduce requirements that are additional to the CDM's V & R requirements in order to ensure that the CDM

[910] That is analysis of (a)(i) and (a)(ii): do CDM project in host countries with robust approval procedures contribute in more and varied ways to sustainable development in those countries than projects hosted in countries without such robust procedures?; and how do the CDM projects assessed in this thesis contribute to sustainable development in CDM host countries?

promotes their sustainable development goals. For instance, despite China's discriminatory tax scheme on CERs, it currently dominates the UNFCCC project pipeline and this has not discouraged CDM investors from implementing projects in China. Additional host country requirements will clearly be issues that CDM investors will consider when choosing a host State, but it is unlikely to be the most important factor. This is because, as discussed in Chapter 1, national issues such as good governance, political stability, strong rule of law and a stable investment climate are likely to be more important to CDM investors.[911]

The analysis of the sustainable development claims made by project participants in the PDD indicates that employment generation is the most common sustainable development claim made by project participants, in the PDDs assessed. This is followed by improved air quality, technology transfer and lastly, other direct benefits to local communities. The findings here align with the findings in Olsen and Fenhann's assessment of 744 PDD for their sustainable development benefits. According to that study, "[e]mployment generation is the most likely impact of an average CDM project, with more than two-thirds of all projects (68%) contributing to this aspect of SD. Close to half of all CDM projects (46%) contribute to economic growth and slightly less (44%) to improved air quality… Only a few projects contribute to the dimension 'other benefits."[912]

There are four main conclusions to be drawn from the analysis. First, given the limited capacity of the CDM to promote sustainable development as discussed in previous chapters, it is impressive how in practice, some projects do actually seem to do so. This is of course down to the efforts of the host country and the project participants and their commitment to

[911] See Chapter 1, Section 1.5.
[912] Olsen and Fenhann, (2008), 2825.

promote sustainable development.

Second, claims of sustainable development contribution by CDM project participants are commendable, especially those projects that go the extra mile to commit funds for programmes that alleviate poverty and build capacity in local communities. However, these claims may become empty promises unless CDM project participants act on the claims made in the PDDs. Regrettably, the CDM rules do not require that the sustainable development benefits of CDM projects should be monitored and verified as they do the emission reduction benefits of CDM projects.

Third, the impression that comes across from analysis of CDM projects is that, to a large extent, achieving or promoting sustainable development is an afterthought for most CDM project participants and investors.[913] There has also been much copying and pasting amongst the PDDs assessed, especially in the sustainable development contributions section. This is not restricted to certain host countries or sectoral scopes, it cuts across the host countries and sectoral scopes analysed.[914] For instance, a couple of the PDDs assessed are all very similar in their wordings on the generation of employment. For example, 'Catalytic N2O destruction project in the tail gas of three Nitric Acid Plants at Hu-Chems Fine Chemical Corp.' states in its PDD that "[t]he project developer agreed to pay a share of the income of the CERs to the project operator, who is a major job provider in the region. Additionally, value and jobs will be created in the region especially during the construction work of the EnviNOX@-

[913] A. Olhoff *et al.*, *CDM Sustainable Development Impacts* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2004), 11.
[914] For example, see CDM project reference: 0261 and 0340 (India) (sectoral scope 3); 0306, 0550, 0868, 0767, 0306, 0193, 0232 (China) (sectoral scope 11); and 0902, 0892, 1135, 1230, 1250 and 0770 (China) (sectoral scope 8).

Systems."[915] Similarly, the 'Catalytic N2O destruction project in the tail gas of the Nitric Acid Plant of Abu Qir Fertilizer Co.' repeats this verbatim.[916] Interestingly, these two CDM projects are implemented in Republic of Korea and Egypt respectively, they have different project participants, Germany and Austria and Germany respectively, but they are validated by the same DOE, TÜV SÜD.[917] This suggests that the sustainable development claims made in the PDDs are empty claims, which are sometimes far-fetched. It also suggests that stakeholders were not given the opportunity to contribute or comment on the sustainable development impact of the project and that project participants themselves did not consider the sustainable development contributions of such projects at the design and pre-registration stages.

Fourth, as a result of the lack of international criteria and indicators for assessing the sustainable development contributions of proposed CDM projects, it remains to be seen how much sustainable development will accrue to host countries in the CDM. This is because the sustainable development claims of project participants are not assessed using standard sustainability assessment tools. Furthermore, CDM projects are not monitored to verify that the sustainable development claims made by project participants in their PDDs are actually realised during the implementation of the proposed CDM project. The effect of this is that the sustainability criteria of host countries are made more ineffective, since there is no international requirement to assess and monitor projects for sustainable development impacts

[915] CDM project reference 0765 (sectoral scope 5). http://cdm.unfccc.int/filestorage/R/0/D/R0DM6YIHG2474ZGI9HIN8PUIV2F02D/PDD%20HU%20Chems%20final-1.pdf?t=bFd8MTMwNjAxNDU5NC4yNA==|kLu661SzU6dud34uRKzzzf7iRDY=, 84. (UNFCCC Website, 16/3/ 2011).

[916] CDM project reference 0490 (sectoral scope 5). http://cdm.unfccc.int/filestorage/T/0/5/T05RM2IYBWZBRTJI4TQSSE89WQTBK7.1/PDD_final.pdf?t=VTR8MTMwNjAxNTA5Ny4wOQ==|xelpZOmIk5LA9N9540ejfH6ilTQ=, 67. (UNFCCC Website, 16/3/ 2011).

[917] Also see: CDM project reference 0120 and 0105 (sectoral scope 5), both validated by TÜV SÜD, which contain identical paragraphs, "[t]his project activity will also increase local employment of skilled labour for the fabrication, installation, operation and maintenance of the specialized equipment."

during implementation. Furthermore, the absence of follow-up means projects are not held accountable for their effect on sustainable development indicators during project implementation. It is important to introduce a detailed *ex ante* assessment of potential impacts and *ex post* assessment to continuously monitor whether the claims made in the PDDs are correct and projects are not resulting in negative impacts.

Sustainable development contributions can only be implemented successfully if it is supported by a structured stakeholder participation process. However, because the CDM rules do not provide minimum standards and guidelines on how to conduct stakeholder's participation process, its fulfilment and implementation has been ad-hoc and haphazard. One of the biggest omissions is that the CDM rules do not have a grievance mechanism for local stakeholders. This is a missed opportunity for stakeholders to raise complaints during the implementation of the project. It is also a missed opportunity to guard against the possibility of negative impacts developing during project implementation, which were not visible or identified in the design phase.

There are two main conclusions to be drawn from the analysis of the fulfilment of stakeholder's participation process. Although some of the host countries have adopted practices that are worthy of emulation by other host countries, for example Brazil, the general trend with fulfilling this requirement is that the process is ill-defined, poorly implemented and badly documented. For example, the PDDs for most of the projects analysed do not provide enough information about the stakeholder participation process, to allow a conclusion to be reached about whether or not the process is sufficient and would effectively contribute to sustainable development in the host countries. The PDDs contain insufficient information, and as a result, the CDM's institutional bodies, including the EB and the DOE are not given

sufficient information to judge the effectiveness of the fulfilment of the requirement.

Despite the above, all the projects analysed here have been registered, which means that the EB was satisfied with the fulfilment of the stakeholder participation requirement. This ties in closely with the issue of standards for fulfilling the V & R requirements. The PDDs contain the information they are required to contain and no more. Without standards for fulfilling the requirements, the EB has no basis for questioning the fulfilment of this requirement and other V & R requirements that are tools for promoting sustainable development. If there were, for example, standards or guidelines for fulfilling the stakeholder participation requirement, then the EB could question the fulfilment of the requirement based on these standards or guidelines, and in this way, ensure the effective fulfilment and supervision of the requirement.

The fulfilment of the requirement for environmental analysis and EIA by CDM projects is unlikely to promote sustainable development in CDM host countries. This is because it is impossible to independently verify the result of the environmental analysis conducted by project participants. Most of the PDDs only contain confirmation that the project does not result in negative environmental impact without attaching the result of the analysis to the PDD. Furthermore, project participants are not obliged to make the result available to stakeholders and the validator. This is an important omission because environmental analysis will highlight possible negative environmental or social impacts and it may also ensure that mitigating measures are established to address the negative impact identified. In contrast, the aim of the GS's 'Do No Harm Assessment' is to gain an insight into the possible negative impacts that might result from the implementation of the project. Therefore, to ensure that the requirements for environmental analysis and EIA are effective tools for promoting

sustainable development, the requirement for environmental analysis should be replaced with the more structured 'Do No Harm' assessment of the GS. Furthermore, the requirement for EIA should be based on the outcome of the 'Do No Harm Assessment' rather than being based solely on the environmental regulations of the host country.

The result of the analysis of confirmation of sustainable development contribution has a spill over effect on the requirement for baseline and monitoring requirement. This is because the weak sustainability assessment by host countries is further weakened by the absence of requirement to monitor and verify sustainable development impact of CDM projects. Furthermore, in the few countries that have well developed sustainability criteria such as Brazil and China, their sustainability criteria are undermined due to the lack of monitoring or verification of impacts during project implementation.

Given that Chapter 3 concluded that the V & R requirements in the CDM rules and the additional requirements contained in the CDM PS and the CDM VVS are limited in their potential to promote sustainable development in CDM host countries, it is hardly surprising that the overall conclusion of the analysis made herein is that the fulfilment and the implementation of the V & R requirements that are tools for promoting sustainable development has not made much contribution to sustainable development in CDM host countries. In fact, it is surprising that some of the projects have made more contribution to sustainable development than can be reasonably expected.[918] Furthermore, it is insightful that some of the projects highlighted in this study for commendable practices are GS projects; 'Kuyasa low-cost urban housing energy upgrade project, Khayelitsha (Cape Town; South

[918] CDM project reference 0001 (sectoral scope 11), http://cdm.unfccc.int/UserManagement/FileStorage/FS_59491890, 83. (UNFCCC Website, 18/8/ 2010).

Africa)' and 'Eecopalsa – biogas recovery and electricity generation from Palm Oil Mill Effluent ponds, Honduras'.[919] The additional GS requirements provides the minimum standards and guidelines advocated in this thesis, which ensures that those requirements that will promote sustainable development in CDM host countries are effectively fulfilled by project participants and implemented by the host country.

In view of the fact that developing countries rejected the proposed guidance from the EB on the criteria for measuring the sustainable development contribution of proposed projects,[920] and the conclusions made from the analysis of registered projects, it is important to examine reasons why developing countries are enthusiastic to host CDM projects which do not fulfil the sustainable development objective of the CDM or promote their sustainable development priorities. One key reason is that it is to the benefit of host countries to secure as many CDM projects as possible because of the investment that CDM projects bring into the host country. As a result of the attraction of foreign investment, it seems some host countries refrain from establishing stringent approval procedures and sustainability criteria that can dampen investment. The sustainability criteria established, if established at all, usually varies from country to country, the criteria are not precise, transparent and stringent in their application and the assessment process and the approval procedure of the DNAs are usually nominal.

However, this is an erroneous view by developing countries because research studies, and the current distribution of CDM projects proves that rather than seek out countries with weak sustainability criteria for assessing projects, CDM investors are more likely to invest in

[919] CDM project reference 0079, http://cdm.unfccc.int/filestorage/F/S/_/FS_292989657/Kuyasa%20PDD%20Final-2005.pdf?t=Mmh8MTMwNjk1NTExNC4zOQ==|mtZdQRjmo6gEFzfQXY5Ih14TymA= and CDM project reference 0115, http://cdm.unfccc.int/Projects/DB/TUEV-SUED1151931954.52/view. (UNFCCC Website, 11/1/ 2011).

[920] See Chapter 2, Section 2.3.2.

countries that have favourable investment climate, good governance, technical capacity to implement the CDM, political stability, existence of a strong rule of law and the availability of infrastructures, amongst other considerations.[921] For example, according to Capoor and Ambrosi, China is the favourite choice for CDM investors because of its large size, economies of scale in origination, and favourable investment climate.[922]

Another key reason is that the sustainable development benefits from a CDM project is not monetised in the current CDM reward system. Therefore, host countries and project participants have little incentive to establish mechanisms or measures that will promote sustainable development in CDM projects.[923]

It is unacceptable that a mechanism that was established by the international community in response to the adverse effect of climate change on sustainable development should result in negative consequences for local stakeholder and the environment. The result of the analysis in Chapters 3 and 5 indicates that there is a high possibility that CDM projects could be resulting in negative impacts on the environment and the infringements of peoples' rights. For example, the absence of a requirement to submit a sustainable development monitoring plan, and to monitor the sustainable development impact of projects during implementation, is a major failing of the V & R requirements. This thesis has demonstrated, through the

[921] See the World Bank's 'Investment Climate Assessments', available at http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRSUMAFTPS/0,,contentMDK:20763282~menuPK:2153382~pagePK:51246584~piPK:51241019~theSitePK:2049987,00.html (World Bank, 2/04/2012).
[922] K. Capoor and C. Ambrosi, *State and Trends of the Carbon Market 2008* (Washington: World Bank, 2008), 26.
[923] See Chapter 1, Section 1.3.2.

analysis of the GS requirement that the sustainable development impact of projects can be assessed prior to registration and monitored during implementation.[924]

Furthermore, CDM host countries have an obligation to ensure that CDM projects implemented in their territory do not result in negative impacts on the environment and its citizens. For example, host countries have an obligation to ensure that the activities of CDM project participants do not result in the violation of human rights, which by extension results in the violation of international treaties, such as the African Charter on Human and Peoples' Rights.[925] The COP recognised this obligation in Decision 1/CP.16, which stated that "… Parties should, in all climate change related actions, fully respect human rights".[926]

Ultimately, the responsibility to ensure that the CDM promotes sustainable development does not only lie with the CDM's international body, it also lies with CDM host countries. Furthermore, CDM projects that results in negative impacts jeopardises the overall aim and objective of the CCR. Therefore, CDM host countries and the international community have a joint responsibility to ensure that the CDM is consistent in promoting sustainable development whilst reducing or avoiding GHG emissions.

The analysis of rejected projects shows that the supervision of the fulfilment of the V & R requirements by the CDM's institutional bodies is unlikely to promote sustainable development in host countries. Again, as discussed in Chapters 3 and 4, and from the analysis of the reasons for the rejection of proposed CDM projects, it is clear that the CDM's institutional bodies, especially the EB and the DOE, do not have the authority to question the

[924] See Section 6.2.5 *infra*.
[925] Adopted in June 27, 1981, see 21 I.L.M. 58 (1982). Also see International Covenant on Economic, Social and Cultural Rights, 6 I.L.M 368 (1967).
[926] FCCC/CP/2010/7/Add.1, Paragraph 8.

manner in which those V & R requirements that will promote sustainable development in CDM host countries have been fulfilled. However, they have the authority to question the fulfilment of the additionality requirement and the monitoring, verification reporting requirements, requirements which although will contribute to sustainable development in a global context but will not necessarily contribute to sustainable development in CDM host countries. Furthermore, because the CDM rules do not give the EB the authority to ensure the effective fulfilment of those V & R requirements that will promote sustainable development in CDM host countries, any attempt by them to go beyond their authority and their mandate will be *ultra vires*. Therefore, this lack of authority prevents the EB from ensuring that the requirements that will promote sustainable development in CDM host countries are fulfilled effectively.

5.6 Conclusion

The analysis of registered CDM projects in this study demonstrates that the fulfilment of the V & R requirements by project participants is unlikely, in many cases, to promote sustainable development in CDM host countries. This is because as discussed in Chapter 3 and from the analysis above, the CDM rules lack minimum standards and guidelines to guide project participants in effectively fulfilling those requirements that are regarded as tools for promoting sustainable development. As a result of this, V & R requirements, such as stakeholder participation, are often not fulfilled in a way that will promote sustainable development in host countries. The assessment and analysis of more recent 2012 registered projects however recorded some improvement and there is an indication of a learning by doing' amongst project participants and CDM host countries. However, the effective fulfilment and the implementation of the V & R requirements, that are regarded as tools for promoting sustainable development, remains uneven amongst the host countries.

As highlighted in Chapter 3, the ability of the CDM to promote sustainable development in CDM host countries can be enhanced through the introduction of minimum standards and guidelines for the fulfilment of those V & R requirements that are regarded as tools for promoting sustainable development. Ultimately, the V & R requirements for CDM should be an avenue to foster policy reforms in developing countries.[927] To that end, the next chapter will make recommendations based on findings from this study.

[927] The ways in which the V & R requirements can foster policy reforms in CDM host countries have been discussed extensively in Chapter 3, section 3.3.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

"We surely have to hope for all our sakes that the forms of climate governance we are now busy constructing are up to the scale of the challenge we are faced with, and can deliver change within the time we have available to us to prevent the very worst scenarios of uncontrolled climate change."

- *H. Bulkeley and P. Newell*[928]

"*Two things can be said about the CDM: it has been successful in creating a dynamic carbon market, and it can certainly be improved."*

- *K. Olsen and J. Fenhann*[929]

6.1 Conclusion

A widely shared view is that currently, the CDM does not significantly contribute to sustainable development in CDM host countries though sustainable development is one of the twin objectives of the CDM.[930] The foundational chapters of this research presented some of the reasons cited. These include *inter alia*, that trade-offs exist between the twin objectives of the CDM and there are no market incentives in the CDM to promote its sustainable development objective.[931] However, as highlighted in Chapter 5, despite the CDM's challenges in promoting sustainable development in developing countries, it is important to acknowledge that the CDM is contributing to sustainable development in a select few host countries, such as Chain and Brazil. The CDM is likely to promote sustainable development in these countries not because of the governing and institutional structure of the CDM, but

[928] H. Bulkeley and P. Newell, *Governing Climate Change* (Abingdon: Routledge, 2010), 114.
[929] K. Olsen and J. Fenhann, 'Editorial' in K. Olsen and J. Fenhann (eds.), *A Reformed CDM – including new Mechanism for Sustainable Development* (Roskilde: UNEP Risoe Centre on Energy, Climate and Sustainable Development, 2008), 5 at pg. 6.
[930] See Chapter 1, Section 1.3.2.
[931] *Ibid*.

because these countries have robust procedures in place to ensure that the CDM promotes their national development priorities and objectives.[932]

As outlined in Chapter 1, the aim of this study is to examine the suitability of the V & R requirements for CDM projects and the fulfilment, implementation, and supervision of the V & R requirements in practice, and whether these helps or hinders the promotion of sustainable development. This is because several of the CDM's V & R requirements are regarded as tool for achieving sustainable development in international law and therefore, on the face of it, their effective fulfilment, implementation and supervision should help contribute to sustainable development in developing countries and to the CDM achieving its sustainable development objective. Consequently, to achieve the aim of this research, this thesis sought to answer two main research questions and two sub research questions: to what extent are the V & R requirements suitable for promoting sustainable development?; how are the V & R requirements fulfilled, supervised and implemented in practice, and has the practical application of the V & R requirements helped or hindered the promotion of sustainable development?[933] The following sub-research questions were also addressed in this research: what is the meaning of sustainable development in international law and the CCR?; do the rules confer sufficient authority on the CDM's institutional bodies to effectively implement and supervise the V & R requirements?

To set the scene for the thesis, and to answer the first sub-research question, Chapter 2 examined sustainable development in the context of the CDM, especially Article 12 of the KP and the CDM rules, which includes the V & R requirements, and it concluded that one of

[932] See Chapter 5, Section 5.3.1.
[933] See Chapters 3 and 5 respectively for relevant discussion.

the key reasons for the current failure of the CDM to deliver on its sustainable development mandate is that the CCR particularly Article 12 and the CDM rules do not define the sustainable development that the CDM is established to promote. Therefore the following chapters considered if there were shortcomings in the V & R requirements themselves or if the shortcoming is from the fulfilment, implementation, and supervision of the V & R requirements that contribute to the CDM's challenges in achieving its sustainable development objective. Chapter 3 examined the suitability of the V & R requirements and the further clarifications contained in the CDM PS and VVS, in order to determine if these requirements can contribute to the sustainable development objective of the CDM, this being the first part of the main research question. Chapter 3 concluded that the V & R requirements, especially those that are regarded as tools for promoting sustainable development, are not suitable to promote sustainable development in CDM host countries. Furthermore, the chapter concluded that although the CDM PS and the VVS provides additional clarifications, these do not go far enough to prescribe minimum standards and guidelines that are necessary for fulfilling and implementing those V & R requirements in a way that promotes sustainable development in CDM host countries.

Given that Chapter 3 concluded that the V & R requirements and the additional clarifications are not adequate to promote sustainable development and in order to answer the second sub-research question, Chapter 4 considered whether, despite the conclusion in chapter 3, the CDM's institutional bodies can effectively supervise and implement the CDM V & R requirements, and whether they can through this supervision, promote sustainable development in CDM host countries. Chapter 4 concluded that CDM does not confer sufficient authority on the CDM's institutional bodies to go beyond the checklist to determine the adequacy of the fulfilment and the implementation of V & R requirements that will

promote sustainable development in CDM host countries. The second part of the main research question was examined in Chapters 5. The chapter concluded that the fulfilment of the V & R requirements by project participants is unlikely, in many cases, to promote sustainable development in CDM host countries. This is because as discussed in Chapter 3, and from the analysis of registered projects in Chapter 5, the CDM rules lack minimum standards and guidelines that should guide project participants in effectively fulfilling those requirements that are regarded as tools for promoting sustainable development. Chapter 5 also concluded that the supervision of the fulfilment of the V & R requirements by the CDM's institutional bodies is unlikely to promote sustainable development in host countries. This is because, as discussed in Chapters 3 and 4, and from the analysis of the reasons for the rejection of proposed CDM projects, the CDM's institutional bodies, especially the EB and the DOE, do not have the authority to question the manner in which the V & R requirements, that will promote sustainable development in CDM host countries, have been fulfilled and implemented.

Ultimately, this thesis believes that the V & R requirements for CDM projects should be an avenue to foster policy reforms in developing countries. However, the analysis in this thesis shows that the current fulfilment, implementation and supervision of the V & R requirements for CDM projects cannot foster policy reform in developing counties, which is necessary for achieving sustainable development.

To address these problems, this thesis makes the following seven recommendations based on the outcome of the analysis of the V & R requirements, CDM rules, CDM PS, CDM VVS and registered and rejected projects. Obviously, some of the recommendations suggested herein will increase the costs of developing and implementing CDM projects. However, as

mentioned in Chapter 3, the additional cost and steps required to obtain GS certification were described by project participants as manageable. In addition, the recommendations made herein will improve the environmental integrity of the CDM and more importantly ensure the sustainable development objective of the CDM is fulfilled, implemented and supervised effectively.

6.2 Recommendations

6.2.1 Minimum Standards and Guidelines for Fulfilling the V & R requirements for CDM Projects

Chapter 3 concluded that the V & R requirements that are regarded as tools for achieving sustainable development are not suitable to promote sustainable development and that the CDM PS and VVS do not provide the minimum standards and guidelines required to ensure their fulfilment and implementation promotes sustainable development. Therefore, this thesis recommends that the EB should introduce compulsory minimum standards and guidelines for fulfilling those V & R requirements that are generally regarded as tool for achieving sustainable development. This is important because CDM host countries are at different levels of development and as a result, standards and regulations may not exist in some host countries for fulfilling those V & R requirements in a way that will promote sustainable development. Furthermore, the minimum standards or guidelines will address the issue of the varied ways in which these requirements are fulfilled by project participants, and, it will ensure that the V & R requirements are fulfilled effectively. Specific recommendations for the minimum standards and guidelines are discussed below.

6.2.2 Internationally Acceptable Sustainable Development Criteria and Indicators for Assessing Proposed CDM projects

Chapter 2 concluded that one of the key inadequacies of the CDM is the absence of minimum

standards and guidelines for the governance and implementation of sustainable development. Furthermore, the analysis of the requirement for written confirmation of sustainable development contribution by host countries concluded that the sustainable development claims of project participants are not assessed, using standard sustainability assessment tools. Consequently, this thesis recommends that internationally acceptable sustainable development criteria and indicators should be defined for CDM projects. Project participants must demonstrate clearly how the proposed CDM project contributes to sustainable development in the host country. This can be done, for example, by using a sustainability assessment matrix tool to score proposed projects based on sustainable development criteria such as local and global environmental sustainability, social sustainability and development and economic and technological development. For example, a possible indicator for environmental sustainability includes improved air quality, a possible indicator for social sustainability includes quality of employment, and a possible indicator for economic sustainability includes employment creation.[934]

To implement this recommendation, using the table in Chapter 3 Table 3.1, project participants should assess how their projects score against a set of pre-determined sustainable development indicators. The indicators are assessed against the baseline scenario and can be scored positive, neutral or negative, depending on their impacts on the sustainable development indicator assessed. Therefore, indicators that have a negative impact are scored '-'although they can be remedied with mitigation measures, which changes the score to '0', indicators that have a positive impact are scored a '+' and indicators with neutral impacts are scored '0'. To be eligible for registration as a CDM project, proposed projects must contribute positively to at least two of the three indicators and be neutral in the third. If the

[934] See Chapter 3 for suggested sustainable development indicators.

project fails the sustainability assessment, the project should be refused registration except the project is altered or additional mitigation measures are established to mitigate the negative impacts.

6.2.3 Comprehensive Framework for Stakeholder Participation

With regards to the requirement for stakeholder participation, the analysis of its practical fulfilment and implementation by project participants and host countries concluded that because the CDM rules do not provide minimum standards and guidelines on how to conduct stakeholder's participation process, its fulfilment and implementation has been ad-hoc and haphazard. This thesis recommends that as a minimum, the following framework should for established for fulfilling this requirement. The recommended framework consists of preparatory guidelines, before the stakeholder consultation takes place, and guidelines for conducting the actual consultation.

(i) Minimum invitation standards and minimum list of stakeholders: there should be specific requirements with regards to the mode of invitation for stakeholders and the minimum list of stakeholder that should be invited for consultation. As minimum, local policy makers that regulate local industries that are relevant to the proposed CDM project, surrounding local communities and local people directly impacted by the project, local NGOs that monitor CDM projects or that are involved in related activities; and an official representative of the DNA, should be invited as stakeholders. This thesis acknowledges that the interest of the above suggested stakeholders will most likely be different, for example the impact of the project on stakeholders living in the local community where the project will be implemented will be different from that of the policy maker or the DNA. Therefore, this thesis further recommends that the DOE selected to validate the project should also be invited to attend the consultation process(es). Although the

DOE cannot be classified as a stakeholder, his involvement in the consultation process will ensure that there are checks and balances to protect the interest of stakeholders and also to ensure that project participants conduct the consultation process according to the minimum standards and guidelines stipulated by the EB.

Furthermore, this thesis recognises that CDM projects are different and the way and level in which proposed projects affect stakeholders differ. For example, stakeholders of an end-of-pipe CDM project would most likely be less affected by its implementation than the stakeholders of a hydroelectric power project. Therefore, this thesis recommends that projects that are more likely to affect their surrounding environment and communities should have an expanded list of stakeholders such as the ones mentioned earlier.

(ii) Two stakeholder consultations, one during the design stage of the project and the other during the validation and registration stages. The EB should also provide guidelines on how to organise the meetings, the minimum number of stakeholders that should be invited for the different types of CDM projects and the documents that should be made available during the meeting in a non-technical summary to stakeholders.

(iii) This thesis further recommends that the rules should require that consultation with stakeholders is conducted in an appropriate local language(s), consultation should be jointly organised by the project participants and an independent representative of the local community.

(iv) Grievance Mechanism: The decision to implement a CDM project invariably has an impact on stakeholders. As such, access to justice, which is one of the elements of participation, is important for achieving sustainable development and for successful project implementation. This thesis recommends that a grievance

mechanism should be established for stakeholders. The grievance mechanism should address unresolved issues that arise from the stakeholder participation process, the environmental analysis and the sustainability assessment.

This thesis recommends a two level approach for the grievance mechanism. At the first level, the CDM rules should prescribe that all DNAs should establish a grievance mechanism where stakeholders can report grievances to the DNA, for example, where the project does not conform to national rules and regulations or the national requirement for obtaining host country approval for CDM projects. This recommendation will not necessarily lead to additional cost for the DNA because ordinarily, all DNAs have an appeal mechanism in place as part of their project approval procedure.

At the second level, the CDM should establish a grievance mechanism for stakeholders to present their complaints to the DOE at first instance, and if the grievances remain unresolved by the DOE, stakeholders should be able to present same to the EB. The grievance presented by stakeholders at this level should relate to the V & R requirements, for example, a stakeholder may want to question the result of the sustainable development impact assessment or other issues that may arise from the result of the environmental analysis and were not properly resolved during the stakeholder participation process. This thesis further recommends that the DNA, the DOE and EB should suspend the approval, validation and registration of such projects, pending the determination of the issues raised.

Furthermore, post-registration, the grievance mechanism will address issues such

> as negative impacts developing during project implementation that were not visible or identified in the design phase. If the project is in the implementation stage, the EB should suspend issuance of CERs to the project until the grievance has been resolved. The grievance mechanism should be supervised by an independent body created by the UNFCCC Secretariat, independent from the project participant, the EB and the DOE.

To implement the stakeholder consultation process, project participants should make a presentation of the proposed project to stakeholders and provide them with the results of the sustainability assessment and the 'Do No Harm' assessment.[935] The aim of the consultation should be to inform stakeholders about the project and give them the opportunity to discuss the assessment results presented to them by the project participants. To enable stakeholders respond to the assessment results they should also be provided with a questionnaire on the possible environmental and social impacts of the project, during the initial consultation process. The issues that emanate from the presentation, the assessment results, and the answers from the questionnaires should be addressed during the initial consultation process. Furthermore, project participants should be allowed, if they wish, to go with the questionnaire, fill it out and bring it back during the second consultation process. The questionnaire will assist the project participants and the stakeholders narrow down the issues that require further discussion and explanation during the second round of consultations. The recommendation will improve the project design based on stakeholder comments and increase stakeholder involvement in the project.

[935] This is discussed in the following recommendation.

Lastly, as discussed in Chapter 3, the current definition of a stakeholder is vague and it does not clarify who is required to be consulted in the stakeholder participation process for CDM projects. This thesis therefore makes two complimentary recommendations, first that the meaning of stakeholder as defined in the CDM rules should be amended and made clearer. In the alternative, the CDM could adopt Brazil's procedure. Rather than define stakeholders, a minimum list of stakeholders that should be consulted should be provided for CDM projects. The CDM can go a step further than the Brazilian procedure by prescribing the different stakeholders that should be consulted for different categories of projects.

6.2.4 Replace Environmental Analysis with the Gold Standard's 'Do No Harm' Assessment

The fulfilment of the requirement for environmental analysis and EIA by CDM projects is unlikely to promote sustainable development in CDM host countries. This is because the requirement for environmental analysis is unclear and as a result of this, the requirement has been fulfilled in a haphazard manner. For example, it is impossible to independently verify the result of the environmental analysis conducted by project participants. This is because most of the PDDs only contain confirmation that the project does not result in negative environmental impact without attaching the result of the analysis to the PDD. This thesis recommends that the GS's 'Do No' Harm' assessment should replace the environmental analysis requirement for CDM projects.[936] This thesis further recommends that if the result of the self-assessment indicates that negative effects, which cannot be remedied with mitigation measures, will arise from the project, then such a project should be eliminated from the CDM's registration process. As such, this process should ideally be one of the earliest assessments that project participants conduct during the design stage of the project and it should complement the stakeholder consultation and the sustainability assessment processes.

[936] See Chapter 3, Section 3.2.3 for further discussions on the GS's 'Do No Harm' assessment.

To implement this recommendation, project participants should conduct a self-assessment that questions if there is likelihood that the proposed project might breach any of the safeguarding principles.[937] For example if the project participant identifies that the project might result in a breach of Principle 4 of the safeguarding principle, which states that the project should not involve in or is complicit in involuntary settlement, the identification of the likelihood of the breach requires that a mitigation measure, which will ensure that involuntary resettlement does not occur, is established for the project. This will ensure that when resettlement occurs, it is voluntary and it is done in an equitable, transparent, and fair manner. Table 6.1 below provides an example of the self-assessment required from project participants.

Table 6.1: 'Do No Harm' Assessment Table

Project	Safeguarding Principle	Description of relevance to my project	Assessment of my project risk	Mitigation measure
Landfill gas capture	Labour standards	Unsafe handling of the captured gas	High	Organise training and only authorise trained personnel on site
Off grid solar	Environmental Protection	Batteries used to store electricity end up in environment	High	Organise a recycling system for batteries at end of life time

Source: GS Toolkit

The 'Do No Harm' assessment can act as an EIA pre-screen checklist that helps to determine if an EIA is required or not. This thesis further recommends that the requirement for EIAs in the CDM should not be based solely on host country national regulations but on the result of

[937] The 'Do No Harm Assessment' and the safeguarding principle have been discussed extensively in Chapter 3.

the 'Do No Harm Assessment' of the likely environmental impact of proposed CDM projects.

6.2.5 Monitoring Requirement for Sustainable Development

It is not enough for project participants to make claims of sustainable development benefits without a monitoring, verification and reporting mechanism to ensure that such benefits actually occur. Therefore, in addition to the requirement for monitoring, verification, and certification of the emission reduction achieved by CDM project, it is hereby recommended that sustainable development monitoring plans that assess sustainable development benefits of CDM projects should be introduced. This will ensure that claims of sustainable development contribution made by project participants during the validation and registration stages are actually realised during the implementation of CDM projects. This will also ensure that the project does not result in negative impacts during its implementation.[938] To implement this recommendation, project participants should be required to submit a sustainable development monitoring plan, in addition to the emission reduction monitoring plan required by the V & R requirements. All the indicators cited in the sustainable development assessment matrix should be monitored during the monitoring period.

Furthermore, this thesis recommends that the result of the monitoring should be verified and certified by an independent assessor and it should count towards the award of CERs for projects. Although this recommendation might increase the implementation cost of the project for the project participant or the host country, it is the best alternative. This is because there are limitations in the viability of the other alternatives, such as the DOE or the host country conducting the sustainable development verification. First, the current lists of DOEs on the UNFCCC's list are better qualified to verify emission reductions. This is because DOEs are usually auditing consultancy firms that provide CDM validation and certification

[938] This will serve as a follow-up to the recommendation for sustainable development assessment.

services and, as such, they are less qualified to monitor and verify the sustainable development impact of CDM project. Secondly, it is unlikely that developing host countries will have the capacity, such as funding and expertise to effectively conduct the sustainable development verification check. Furthermore, this will likely raise the same problems discussed in Chapter 5 with regards to confirmation by the DNA of sustainable development contribution of projects.

In addition, where the verification check indicates that the sustainable development benefits were not achieved, or that the project results in negative impacts, the CDM's institutional body should, in conjunction with the host country, decide on appropriate consequences for CDM projects that fail in this regard. For example, the projects could be penalised by making it pay a certain percentage of the CERs earned into a sustainable development fund established by host countries. The funds can then be used to finance sectoral programmes and policies that will promote sustainable development in the host country.

6.2.7 The EB should choose and Pay for the Validation Services of DOEs

This thesis reaffirms the recommendation of several research studies that the EB should remove the discretion that project participants have to select and pay DOEs for their validation services.[939] This would remove the conflict of interest that is likely to arise when DOEs, although acting as agents of the EB in validating CDM projects, are appointed and paid by project participants for their validation duties. To implement this suggestion, this thesis further recommends that the cost of engaging DOEs to validate proposed CDM

[939] See the following: L. Schneider *Is the CDM fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvements*, (Berlin: Öko-Institut, 2007), 7; J. Sepibus, 'The environmental integrity of the CDM mechanism – a legal analysis of its institutional and procedural shortcomings', 23; and E. Lokey, *Renewable Energy Project Development Under the Clean Development Mechanism: A Guide For Latin America*, (London: Earthscan, 2009), 123.

projects can then be added to the registration fee for CDM projects paid by project participants.

Concluding Remarks

This thesis has established that in their existing form, the V & R requirements that are regarded as tools for achieving sustainable development are not well-suited to promote sustainable development in CDM host countries. In addition, this thesis has also demonstrated that the process by which the V & R requirements are fulfilled by project participants, implemented by the DNA and supervised by the CDM's institutional bodies are unlikely to promote sustainable development in CDM host countries. This thesis has also established through the analysis of the GS that minimum standards and guidelines are essential to ensure that the V & R requirements are fulfilled, implemented and supervised so as to promote sustainable development and foster policy reforms in developing countries.

This thesis recognises that some of the recommendations above may touch on issues of sovereignty of CDM host countries, and that the host countries themselves may not be agreeable to standards or guidelines that may likely infringe on their sovereign rights. Nevertheless, this thesis anticipates that the above recommendations, borne out of the research findings in this thesis, would improve the fulfilment and supervision of the V & R requirements that are relevant for achieving sustainable development in CDM host countries and, in turn, enhance the ability of the CDM to achieve its sustainable development objective.

APPENDIX TO THESIS

Appendix 1: List of Registered CDM projects assessed

Project	Country	Sectoral scope
1. 0028	Brazil	1
2. 0079	South Africa	3
3. 0024	Chile	4
4. 0099	Korea	5
5. 0672	Columbia	7
6. 0770	China	8
7. 1027	South Africa	1
8. 0153	Mexico	10
9. 0001	India	11
10. 0008	Brazil	13
11. 0547	China	14
12. 0031	Chile	15
13. 0045	Honduras	1
14. 0123	India	3
15. 0048	Bolivia	13
16. 0120	Mexico	13
17. 0159	Moldova	3
18. 0382	India	10
19. 0003	Korea	11
20. 0051	Honduras	1
21. 0105	Mexico	15
22. 0160	Moldova	3
23. 0490	Egypt	5
24. 0840	China	8
25. 0032	Chile	13
26. 0078	Bangladesh	1
27. 0115	India	11
28. 0152	Vietnam	10
29. 0183	India	4
30. 0902	China	8
31. 0116	Brazil	5
32. 0361	India	4
33. 0247	Malaysia	4
34. 0557	Pakistan	5
35. 0892	China	8
36. 0496	India	10
37. 0193	China	11
38. 0097	Chile	13
39. 0197	Mexico	13
40. 0113	India	1
41. 0173	Moldova	3
42. 0473	India	4
43. 0765	Korea	5

44. 1135	China	8
45. 0616	Indonesia	10
46. 0232	China	11
47. 0140	Argentina	13
48. 0379	Chile	13
49. 0122	Columbia	1
50. 0255	India	3
51. 0717	India	1
52. 0698	Brazil	5
53. 1230	China	8
54. 0605	Philippines	10
55. 0011	China	11
56. 0490	Egypt	5
57. 0492	Honduras	1
58. 0503	Malaysia	13
59. 0253	India	1
60. 0261	India	3
61. 0847	India	4
62. 0837	China	5
63. 1250	China	8
64. 0879	Mexico	10
65. 0151	Mexico	11
66. 0401	Brazil	15
67. 0346	Chile	1
68. 0340	India	3
69. 1070	India	4
70. 0752	South Africa	5
71. 1080	Mexico	10
72. 0306	China	11
73. 0686	India	3
74. 0945	India	15
75. 0876	Argentine	4
76. 0922	Korea	5
77. 0553	Nigeria	10
78. 0550	China	11
79. 0605	Philippines	10
80. 0194	Columbia	1
81. 0499	India	11
82. 0677	India	3
83. 0767	India	11
84. 0771	China	1
85. 0832	India	3
86. 0866	India	3
87. 0868	China	11
88. 0895	India	1
89. 0935	India	13
90. 0961	South Africa	5
91. 1011	Brazil	5
92. 1083	China	5

93. 1092	Brazil	15
94. 1113	Israel	5
95. 1127	China	1
96. 1186	Malaysia	4
97. 1188	India	3
98. 1301	China	15
99. 1332	Armenia	1
100. 1372	Malaysia	3

ADDENDUM: List of Registered CDM projects assessed

Project	Country	Sectoral scope
5626	Senegal	4
5642	India	13
4520	Vietnam	1
5213	India	1
5313	India	1
5509	China	1
4787	China	1
5740	India	1
5552	China	1
5844	China	1
5838	China	1
5854	China	1
5461	Pakistan	5
5957	China	1
5280	China	4
5942	Guatemala	1
5615	Viet Nam	1
6059	China	1
6051	China	1
5021	China	1

Appendix 2: List of Rejected Projects Assessed

Project	Country	Sectoral Scope
1. 0221	India	1
2. 0224	India	1
3. 0311	Mexico	1
4. 0317	Mexico	1
5. 0400	India	1
6. 0410	Brazil	1
7. 0443	Argentina	1
8. 0474	Brazil	1
9. 0522	India	1
10. 0683	India	1
11. 0761	Brazil	1
12. 0871	Panama	1
13. 0951	India	4
14. 0964	Bolivia	1
15. 0977	India	1
16. 0990	India	1
17. 0997	India	1
18. 1004	India	1
19. 1014	Malaysia	1
20. 1016	Malaysia	1
21. 1022	India	1
22. 1035	Honduras	1
23. 1041	Brazil	4
24. 1042	India	1
25. 1043	Honduras	1
26. 1044	Guatemala	1
27. 1056	Honduras	1
28. 1065	Brazil	1
29. 1077	Guatemala	1
30. 1109	India	1
31. 1132	India	1
32. 1148	India	1
33. 1173	Sri Lanka	1
34. 1184	India	1
35. 1195	India	1
36. 1201	India	1
37. 1204	Sri Lanka	1
38. 1215	India	1
39. 1217	India	1
40. 1235	Brazil	1
41. 1252	India	1
42. 1297	India	1
43. 1331	India	1
44. 1377	Republic of Korea	1
45. 1383	India	1
46. 1398	India	1

47. 1412	Republic of Korea	1
48. 1447	Republic of Macedonia	1
49. 1479	Brazil	1
50. 1494	Brazil	1
51. 1545	India	1
52. 1611	China	1
53. 1625	China	1
54. 1669	China	1
55. 1702	India	1
56. 1707	China	1
57. 1710	China	1
58. 1718	China	1
59. 1725	China	1
60. 1846	Philippines	15
61. 0454	India	1
62. 0457	Chile	13
63. 0715	India	1
64. 0754	Brazil	4
65. 0854	Brazil	4
66. 0859	India	4
67. 0861	India	4
68. 0863	India	4
69. 0929	India	4
70. 0954	India	4
71. 0972	Equatorial Guinea	10
72. 0988	Brazil	3
73. 1023	Brazil	3
74. 1030	Brazil	3
75. 1050	Brazil	3
76. 1055	Brazil	3
77. 1057	Brazil	3
78. 1356	Mexico	4
79. 1475	India	4
80. 1058	Brazil	3
81. 1060	Brazil	3
82. 1084	Sri Lanka	4
83. 1285	Malaysia	13
84. 1735	Indonesia	13

Appendix 3: Thesis Assessment Data

KEY

1. MPSD – Monitoring plan for sustainable development
2. PDD – Project Design Document
3. MP – Monitoring plan
4. VR – Validation report
5. SD – Sustainable development
6. CER – Certified Emission Reduction credit
7. PP – Project participant
8. EIA – Environmental Impact Assessment
9. TT – Technology transfer
10. CPSN - Comments By Parties, Stakeholders and NGOs
11. EG – Employment generation
12. SP – Stakeholders participation
13. CDM – Clean Development Mechanism
14. DNA – Designated National Authority

Scope 1 – Monitoring Plan for Sustainable Development		
CDM	**Country**	**MPSD**
0028	Honduras	No
0045	Honduras	No
0051	Honduras	No
0078	Bangladesh	No
0113	India	No
0122	Colombia	No
0253	India	No
0346	Chile	No
0492	Honduras	No
0194	Colombia	No
0606	Guatemala	No
0717	India	No
0771	China	No
0895	India	No
1127	China	No

1332	Armenia	No

Scope 3 - MPSD		
CDM	**Country**	**MPSD**
0123	India	No
0160	Moldova	No
0159	Moldova	No
0173	Moldova	No
0255	India	No
0261	India	No
0340	India	No
0686	India	No
0079	South Africa	No
0677	India	No
0832	India	No
0866	India	No
1188	India	No
1372	Malaysia	No

Scope 4 - MPSD		
CDM	**Country**	**MPSD**
0183	India	No
0247	Malaysia	No
0361	India	No
0473	India	No
0847	India	No
1070	India	No
0876	Argentina	No
0024	Chile	No
1186	Malaysia	No

Scope 5 – MPSD		
CDM	**Country**	**MPSD**
0116	Brazil	No
0490	Egypt	No
0557	Pakistan	No
0765	Republic of Korea	No
0698	Brazil	No
0837	China	No

0752	South Africa	No
0922	Republic of Korea	No
0099	Republic of Korea	No
0961	South Africa	No
1011	Brazil	No
1083	China	No
1113	Israel	No

Scope 7- MPSD		
CDM	**Country**	**MPSD**
0672	Columbia	No

Scope 8 - MPSD		
CDM	**Country**	**MPSD**
0840	China	No
0902	China	No
1135	China	No
1230	China	No
1250	China	No
0770	China	No
0892	China	No

Scope 9- MPSD		
CDM	**Country**	**MPSD**
1027	South Africa	No

Scope 10 - MPSD		
CDM	**Country**	**MPSD**
0153	Mexico	No
0152	Vietnam	Yes
0382	India	No
0496	India	No
0616	Indonesia	No
0605	Philippines	No
0879	Mexico	No
1080	Mexico	No
0553	Nigeria	Yes

Scope 11 (HFC 23) - MPSD		
CDM	**Country**	**MPSD**

0003	Republic of Korea	No
0115	India	No
0193	China	No
0232	China	No
0011	China	No
0151	Mexico	No
0306	China	No
0550	China	No
0001	India	Yes
0499	India	No
0868	China	No
0767	China	No

Scope 13 - MPSD		
CDM	**Country**	**MPSD**
0048	Bolivia	Yes
0032	Chile	No
0097	Chile	No
0140	Argentina	No
0197	Mexico	No
0379	Chile	No
0503	Malaysia	No
0008	Brazil	No
0935	India	No
0908	Tanzania	No

Scope 14- MPSD		
CDM	**Country**	**MPSD**
0547	China	No

Scope 15- MPSD		
CDM	**Country**	**MPSD**
0105	Mexico	No
0120	Mexico	No
0401	Brazil	No
0945	India	No
0031	Chile	No
1092	Brazil	No
1301	China	No

Scope 1 – Other Direct Benefits to Local Communities (Sustainable development)		
CDM	**Country**	**SD (Direct benefit to local community)**

0028	Honduras	Yes
0045	Honduras	Yes
0051	Honduras	Yes
0078	Bangladesh	No
0113	India	Yes
0122	Colombia	Yes
0253	India	Yes
0346	Chile	No
0492	Honduras	No
0606	Guatemala	Yes
0717	India	No
0771	China	No
0895	India	Yes
1127	China	No
1332	Armenia	No
0194	Colombia	Yes

Scope 3 – SD		
CDM	**Country**	**SD (Direct benefit to local community assessed)**
0079	South Africa	Yes
0159	Moldova	No
0123	India	No
0173	Moldova	Yes
0160	Moldova	Yes
0255	India	No
0340	India	No
0686	India	No
0677	India	Yes
0832	India	No
0866	India	No
1188	India	No
1372	Malaysia	No
0261	India	No

Scope 4 – SD		
CDM	**Country**	**SD (Other Benefits)**
0024	Chile	Yes
0183	India	No
0247	Malaysia	No
0361	India	No
0473	India	Yes
0847	India	No
1070	India	No
0876	Argentina	Yes

1186*	Malaysia	Yes

Scope 5 – SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0099	Republic of Korea	Yes
0116	Brazil	No
0490	Egypt	Yes
0557	Pakistan	Yes
0765	Republic of Korea	No
0698	Brazil	No
0837	China	No
0752	South Africa	Yes,
0922	Republic of Korea	No
0961	South Africa	No
1011	Brazil	Yes
1083	China	No
1113	Israel	No

Scope 7 - SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0672	Colombia	Yes

Scope 8 - SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0770	China	No
0840	China	No
0902	China	No
0892	China	No
1135	China	No
1230	China	No
1250	China	No

Scope 9 - SD		
CDM	**Country**	**SD (Direct benefit to local community)**
1027	South Africa	No

Scope 10 - SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0153	Mexico	No
0152	Vietnam	No
0382	India	No

0496	India	No
0616	Indonesia	Yes
0605	Philippines	No
0879	Mexico	No
1080	Mexico	No
0553	Nigeria	Yes

Scope 11 - SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0001	India	Yes
0003	Republic of Korea	No
0115	India	Yes
0193	China	No
0232	China	No
0011	China	No
0151	Mexico	No
0306	China	No
0550	China	No
0499	India	No
0868	China	No
0767	China	No

Scope 13 – SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0008	Brazil	Yes
0048	Bolivia	No
0032	Chile	Yes
0097	Chile	No
0140	Argentina	Yes
0197	Mexico	No
0379	Chile	No
0503	Malaysia	Yes
0935	India	No
0908	Tanzania	Yes

Scope 14 – SD		
CDM	**Country**	**SD (Direct benefit to local community)**
0547	China	Yes

Scope 15 – SD

CDM	Country	SD (Direct benefit to local community)
0031	Chile	No
0105	Mexico	No
0120	Mexico	No
0401	Brazil	No
0945	India	No
1092	Brazil	No
1301	China	No

Scope 1 – Environmental Impact Assessment (EIA)		
CDM	**Country**	**EIA**
0028	Honduras	Yes
0045	Honduras	Yes
0051	Honduras	Yes
0078	Bangladesh	No
0113	India	No
0122	Colombia	Yes
0253	India	No
0346	Chile	Yes
0492	Honduras	Yes
0194	Colombia	Yes
0606	Guatemala	Yes
0717	India	No
0771	China	Yes
0895	India	Yes
1127	China	Yes
1332	Armenia	Yes

Scope 3		
CDM	**Country**	**EIA**
0123	India	No
0160	Moldova	No
0159	Moldova	No
0173	Moldova	No
0255	India	No
0261	India	No
0340	India	No
0686	India	No
0079	South Africa	No
0677	India	No
0832	India	No
0866	India	No
1188	India	No
1372	Malaysia	No

Scope 4 – EIA		
CDM	**Country**	**EIA**
0183	India	No
0247	Malaysia	No
0361	India	No
0473	India	No
0847	India	No
1070	India	No
0876	Argentina	Yes
0024	Chile	No
1186	Malaysia	No

Scope 5 - EIA		
CDM	**Country**	**EIA**
0116	Brazil	No
0490	Egypt	Yes
0557	Pakistan	No
0765	Republic of Korea	No
0698	Brazil	No
0837	China	Yes
0752	South Africa	No
0922	Republic of Korea	No
0099	Republic of Korea	No
0961	South Africa	No
1011	Brazil	No
1083	China	Yes
1113	Israel	No

Scope 7 - EIA		
CDM	**Country**	**EIA**
0672	Colombia	Yes

Scope 8 - EIA		
CDM	**Country**	**EIA**
0840	China	Yes
0902	China	Yes
1135	China	Yes
1230	China	Yes
1250	China	Yes
0770	China	Yes
0892	China	Yes

Scope 9 - EIA		
CDM	**Country**	**EIA**
1027	South Africa	No

Scope 10 - EIA		
CDM	**Country**	**EIA**
0153	Mexico	No
0152	Vietnam	yes
0382	India	No
0496	India	No
0616	Indonesia	No
0605	Philippines	No
0879	Mexico	No
1080	Mexico	No
0553	Nigeria	Yes

Scope 11 - EIA		
CDM	**Country**	**EIA**
0003	Republic of Korea	No
0115	India	Yes
0193	China	Yes
0232	China	Yes
0011	China	Yes
0151	Mexico	No
0306	China	Yes
0550	China	Yes
0001	India	Yes
0499	India	Yes
0868	China	Yes
0767	China	Yes

Scope 13 - EIA		
CDM	**Country**	**EIA**
0048	Bolivia	No
0032	Chile	Yes
0097	Chile	Yes
0140	Argentina	Yes
0197	Mexico	No
0379	Chile	No
0503	Malaysia	No
0008	Brazil	Yes
0935	India	yes
0908	Tanzania	No

Scope 14 - EIA		
CDM	**Country**	**EIA**
0547	China	Yes

Scope 15 - EIA		
CDM	**Country**	**EIA**
0105	Mexico	No
0120	Mexico	No
0401	Brazil	Yes
0945	India	No
0031	Chile	No
1092	Brazil	Yes
1301	China	Yes

Scope 1 – TECHNOLOGY TRANSFER		
CDM	**Country**	**Transfer of Technology**
0028	Honduras	Yes
0045	Honduras	Yes
0051	Honduras	No
0078	Bangladesh	Yes.
0113	India	No.
0122	Colombia	No
0253	India	No
0346	Chile	No
0492	Honduras	Yes.
0194	Colombia	Yes
0606	Guatemala	Yes
0717	India	Yes
0771	China	Yes
0895	India	No
1127	China	No
1332	Armenia	No

Scope 3 – TT		
CDM	**Country**	**Transfer of Technology**
0123	India	Yes
0160	Moldova	Yes
0159	Moldova	Yes
0173	Moldova	Yes
0255	India	No
0261	India	No
0340	India	No

0686	India	No
0079	South Africa	No
0677	India	Yes
0832	India	Yes
0866	India	No
1188	India	No
1372	Malaysia	Yes

Scope 4 - TT		
CDM	**Country**	**Transfer of Technology**
0183	India	No
0247	Malaysia	Yes
0361	India	No
0473	India	No
0847	India	No
1070	India	No
0876	Argentina	No
0024	Chile	No
1186	Malaysia	Yes

Scope 5 - TT		
CDM	**Country**	**Transfer of Technology**
0116	Brazil	Yes
0490	Egypt	Yes
0557	Pakistan	Yes
0765	Republic of Korea	Yes
0698	Brazil	Yes
0837	China	Yes
0752	South Africa	Yes
0922	Republic of Korea	Yes
0099	Republic of Korea	Yes
0961	South Africa	Yes
1011	Brazil	No
1083	China	No
1113	Israel	Yes

Scope 7 - TT		
CDM	**Country**	**Technology Transfer**
0672	Colombia	No

Scope 8 - TT

CDM	Country	Transfer of Technology
0840	China	No
0902	China	Yes
0892	China	Yes
1135	China	No
1230	China	No
1250	China	No
0770	China	No

Scope 9 - TT		
CDM	**Country**	**TT**
1027	South Africa	Yes

Scope 10 - TT		
CDM	**Country**	**Transfer of Technology**
0153	Mexico	Yes
0152	Vietnam	Yes
0382	India	No
0496	India	No
0616	Indonesia	Yes
0605	Philippines	Yes
0879	Mexico	No
1080	Mexico	No
0553	Nigeria	Yes

Scope 11 - TT		
CDM	**Country**	**Transfer of Technology**
0003	Republic of Korea	Yes
0115	India	Yes
0193	China	Yes
0232	China	Yes
0011	China	Yes
0151	Mexico	Yes
0306	China	Yes
0550	China	Yes
0001	India	Yes
0499	India	Yes
0868	China	Yes
0767	China	Yes

Scope 13 - TT		
CDM	**Country**	**Transfer of Technology**
0048	Bolivia	Yes

0032	Chile	No
0097	Chile	No
0140	Argentina	No
0197	Mexico	No
0379	Chile	No
0503	Malaysia	Yes
0008	Brazil	Yes
0935	India	No
0908	Tanzania	Yes

Scope 14 - TT		
CDM	**Country**	**Transfer of Technology**
0547	China	No

Scope 15 - TT		
CDM	**Country**	**Transfer of Technology**
0105	Mexico	No
0120	Mexico	No
0401	Brazil	Yes
0945	India	No
0031	Chile	No
1092	Brazil	No
1301	China	No

Scope 1 - EG		
CDM	**Country**	**Employment Generation**
0028	Honduras	Yes
0045	Honduras	Yes
0051	Honduras	Yes
0078	Bangladesh	No
0113	India	No
0122	Colombia	No
0253	India	Yes
0346	Chile	No
0492	Honduras	No
0194	Colombia	Yes
0606	Guatemala	Yes
0717	India	Yes
0771	China	Yes
0895	India	Yes
1127	China	Yes
1332	Armenia	Yes

Scope 3 - Employment Generation (EG)		
CDM	**Country**	**EG**
0123	India	No
0160	Moldova	Yes
0159	Moldova	Yes
0173	Moldova	Yes
0255	India	No
0261	India	Yes.
0340	India	Yes
0686	India	No
0079	South Africa	Yes
0677	India	No
0832	India	No
0866	India	Yes
1188	India	Yes
1372	Malaysia	No

Scope 4 - (EG)		
CDM	**Country**	**EG**
0183	India	No
0247	Malaysia	No
0361	India	No
0473	India	Yes
0847	India	No
1070	India	No
0876	Argentina	Yes
0024	Chile	Yes
1186	Malaysia	Yes

Scope 5 - (EG)		
CDM	**Country**	**EG**
0116	Brazil	Yes
0490	Egypt	YES
0557	Pakistan	Yes
0765	Republic of Korea	Yes
0698	Brazil	No
0837	China	Yes
0752	South Africa	Yes
0922	Republic of Korea	Yes
0099	Republic of Korea	Yes
0961	South Africa	No
1011	Brazil	No
1083	China	No

1113	Israel	No

Scope 7 – EG		
CDM	**Country**	**Employment Generation**
0672	Colombia	Yes

Scope 8 - (EG)		
CDM	**Country**	**Employment Generation**
0840	China	No
0902	China	Yes
0892	China	Yes
1135	China	Yes
1230	China	Yes
1250	China	Yes
0770	China	Yes

Scope 9 - EG		
CDM	**Country**	**Employment Generation**
1027	South Africa	Yes

Scope 10 - EG		
CDM	**Country**	**Employment Generation**
0153	Mexico	Yes
0152	Vietnam	No
0382	India	No
0496	India	No
0616	Indonesia	Yes
0605	Philippines	Yes
0879	Mexico	Yes
1080	Mexico	Yes
0553	Nigeria	Yes

Scope 11 (HFC 23) - EG		
CDM	**Country**	**Employment Generation**
0003	Republic of Korea	No
0115	India	Yes
0193	China	Yes
0232	China	No
0011	China	Yes
0151	Mexico	No
0306	China	Yes
0550	China	Yes

0001	India	Yes
0499	India	No
0868	China	Yes
0767	China	Yes

Scope 13 – EG		
CDM	**Country**	**Employment Generation**
0048	Bolivia	No
0032	Chile	Yes
0097	Chile	Yes
0140	Argentina	Yes
0197	Mexico	Yes
0379	Chile	No
0503	Malaysia	Yes
0008	Brazil	Yes
0935	India	Yes
0908	Tanzania	Yes

Scope 14 - EG		
CDM	**Country**	**Employment Generation**
0547	China	Yes

Scope 15 - EG		
CDM	**Country**	**Employment Generation**
0105	Mexico	Yes
0120	Mexico	Yes
0401	Brazil	Yes
0945	India	Yes
0031	Chile	No
1092	Brazil	No
1301	China	Yes

Scope 1 - SP		
CDM	**Country**	**Stakeholder Participation**
0028	Honduras	Public meeting
0045	Honduras	Public meeting
0051	Honduras	Community opinion workshop
0078	Bangladesh	Meeting

0113	India	National review
0122	Colombia	Meeting
0253	India	Meeting
0346	Chile	Meeting
0492	Honduras	Meeting
0194	Colombia	Meeting.
0606	Guatemala	Project Environmental and Social Review
0717	India	Meeting
0771	China	Questionnaire
0895	India	Meeting
1127	China	project public review and questionnaire
1332	Armenia	Meeting.

Scope 3 - SP		
CDM	**Country**	**Stakeholder Participation**
0123	India	None
0160	Republic of Moldova	Interviews and discussions
0159	Moldova	Interviews
0173	Moldova	Workshop
0255	India	Meetings
0261	India	Interview
0340	India	Interview
0686	India	Meeting
0079	South Africa	Meeting
0677	India	Meeting
0832	India	Not stated
0866	India	Meeting
1188	India	Meeting
1372	Malaysia	Meeting

Scope 4 - SP		
CDM	**Country**	Stakeholder Participation
0183	India	Meeting
0247	Malaysia	No
0361	India	Meeting
0473	India	Meeting

0847	India	Meeting
1070	India	Meeting
0876	Argentina	Meeting
0024	Chile	Survey
1186	Malaysia	Meeting

Scope 5 - SP		
CDM	**Country**	**Stakeholder Participation**
0116	Brazil	Meeting
0490	Egypt	Questionnaire
0557	Pakistan	Meeting
0765	Republic of Korea	Meeting
0698	Brazil	Meeting
0837	China	Meeting
0752	South Africa	Public information forum
0922	Republic of Korea	Meeting
0099	Republic of Korea	Meeting
0961	South Africa	Meeting
1011	Brazil	Meeting
1083	China	Public meeting
1113	Israel	Meeting

Scope 7 – SP		
CDM	**Project**	**Stakeholder Participation**
0672	Colombia	Meeting

Scope 8 – SP		
CDM	**Project**	Stakeholder Participation
0840	China	Survey
0902	China	Questionnaire
0892	China	Meeting
1135	China	Meeting
1230	China	Questionnaire
1250	China	Questionnaire
0770	China	Questionnaire

Scope 9 - SP		
CDM	**Project**	**SP**
1027	South Africa	Meeting

Scope 10 - SP		
CDM	**Project**	**Stakeholder Participation**
0153	Mexico	Meeting
0152	Vietnam	Meeting
0382	India	Brief interview. Employees identified as stakeholders.
0496	India	Meeting
0616	Indonesia	Meeting
0605	Philippines	Meeting
0879	Mexico	Meeting
1080	Mexico	Meeting
0553	Nigeria	Meeting

Scope 11 - SP		
CDM	**Project**	**Stakeholder Participation**
0003	Republic of Korea	Meeting
0115	India	Meeting
0193	India	Meeting
0232	China	Meeting
0011	China	Public hearing meetings
0151	Mexico	Meeting
0306	China	2 public consultation meetings and questionnaire based survey, Meetings with local residents, local council NGO’s

0550	China	Same as above
0001	India	Meeting
0499	India	Meeting
0868	China	Questionnaire
0767	Republic of Korea	Questionnaire

Scope 13 - SP		
CDM	**Project**	**Stakeholder Participation**
0048	Bolivia	Meeting
0032	Chile	Seminars and workshops
0097	Chile	Letter sent to environmental authorities
0140	Argentina	Meeting
0197	Mexico	Meeting
0379	Chile	Public announcements and letters sent to all the public authorities and neighbors
0503	Malaysia	Meeting
0008	Brazil	Meeting
0935	India	Meeting
0908	Tanzania	Meeting

Scope 14 - SP		
CDM	**Project**	**Stakeholder Participation**
0547	China	PRA Methodology

Scope 15 - SP		
CDM	**Project**	**Stakeholder Participation**
0105	Mexico	Meeting
0120	Mexico	Meeting
0401	Brazil	Meeting
0945	India	Comments sought from employees, customers, nearby villages, environmental conservations board
0031	Chile	Advertisement on webpage for many months, attended seminars and conferences in Chile to present facts about project
1092	Brazil	Meeting
1301	China	Public survey and questionnaire

Appendix 4: 84 REJECTED CDM PROJECTS

Scope 1 – Further Analysis		
Project	**Country**	**Reason for non-registration**
0221	India	Additionality test
0224	India	Additionality test
0311	Mexico	Additionality test
0317	Mexico	Additionality test
0400	India	Additionality test
0410	Brazil	DNA LOA
0443	Argentina	Project start date
0474	Brazil	Documentation
0522	India	Additionality test
0683	India	Additionality test
0761	Brazil	Baseline methodology
0871	Panama	Baseline & monitoring methodology
0951	India	Baseline & monitoring methodology
0964	Bolivia	Baseline and start date project
0977	India	Additionality test
0990	India	Additionality test
0997	India	Baseline methodology
1004	India	Baseline & monitoring methodology
1014	Malaysia	Additionality test
1016	Malaysia	Additionality test
1022	India	Baseline & monitoring methodology
1035	Honduras	Baseline methodology
1041	Brazil	Monitoring plan
1042	India	Additionality test
1043	Honduras	Baseline Methodology
1044	Guatemala	Baseline Methodology
1056	Honduras	Baseline Methodology
1065	Brazil	Additionality test
1077	Guatemala	Additionality test
1109	India	Additionality test
1132	India	Additionality test
1148	India	Baseline methodology
1173	Sri Lanka	Baseline methodology
1184	India	Additionality test
1195	India	Additionality test
1201	India	Additionality test
1204	Sri Lanka	Additionality test
1215	India	Baseline methodology
1217	India	Additionality test

1235	Brazil	Additionality test
1252	India	Additionality test
1297	India	Additionality test
1331	India	Additionality test
1377	Republic of Korea	Additionality test
1383	India	Additionality test
1398	India	Additionality test
1412	Republic of Macedonia	Additionality test
1447	Republic of Korea	Additionality test
1479	Brazil	Additionality test
1494	Brazil	Additionality test
1545	India	Additionality
1611	China	Additionality test
1625	China	Additionality test
1669	China	Additionality test
1702	India	Additionality test
1707	China	Additionality test
1710	China	Additionality test
1718	China	Additionality test
1725	China	Additionality test
1846	Philippines	Baseline Methodology
0454	India	Baseline Methodology
0457	Chile	Monitoring methodology
0715	India	Additionality test
0754	Brazil	Additionality test
0854	Brazil	Additionality test
0859	India	Monitoring plan
0861	India	Baseline & Monitoring methodology
0863	India	Additionality test
0929	India	Additionality test
0954	India	Baseline methodology
0972	Chemical industries/Fugitive emissions from fuels/large	Start date of project
0988	Brazil	Monitoring plan
1023	Brazil	Monitoring plan
1030	Brazil	Monitoring plan
1050	Brazil	Monitoring plan
1055	Brazil	Monitoring plan
1057	Brazil	Monitoring plan
1356	Mexico	Additionality test
1475	India	CDM consideration
1058	Brazil	Monitoring plan
1060	Brazil	Monitoring plan
1084	Sri Lanka	Additionality test
1285	Malaysia	Baseline methodology
1735	Indonesia	Additionality test

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